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Weston-super-Mare

Souvenir of the Conference of the National Union of Teachers, Easter, 1913.

Edited by

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PREFACE

The Conference Council desires to express its thanks to the following gentlemen, for their much appreciated contributions of special articles for this Souvenir.

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Photo.] THE TWO BAYS, WESTON-SUPER-MARE. [*H. Jelly.*

WINSOME WESTON.

SUNNY and winsome Weston! "The Fair White Town upon the Severn Sea," with a residential population of 24,000, has from a mere fishing village developed into one of the most up-to-date health and pleasure resorts in the Kingdom.

Sheltered by well wooded hills from the dreaded "North-Easter," open to the invigorating and health giving breezes of the wide Atlantic, enjoying an equable climate with a mean winter temperature higher than many south coast watering places, and possessing an unfailing supply of pure water and a perfect system of drainage, its rapid advance to a foremost place among English watering places is, indeed, not surprising.

Its natural advantages, admirably supplemented by public and private enterprise, together with its central position and excellent railway and steamboat facilities, make Weston not only an idea health resort, but one of the most popular holiday centres in the country.

From the "History of the Parish Church," by Mr. Ernest Baker, we learn that so long ago as the thirteenth century, Weston possessed a Church and a Rector, but as a health and pleasure resort its history is limited to about a century. Census statistics show that in 1801 the population was only 108; in 1851, 4,033; in 1891, 15,864; in 1901, 19,845; whilst at the present day it is approximately 24,000.

But while Weston itself is wholly modern, the neighbourhood abounds in spots, showing traces of early occupation, and of extreme interest to the antiquary. (*See* special articles pages 35 and 44.)

The present Weston, thanks to the energy and foresight of those responsible, is a fine modern town, well equipped in every respect and presenting features of interest to suit the tastes of all. The fishermen's cottages

Photo.] General View looking North. [*H. Jelly.*

have given way to well built and commodious residences, hotels, boarding-houses and business premises. A magnificent promenade and series of picturesque lawns now occupy the site of what was previously a weary waste of sand-hills, whilst the natural sweep of the bay is broken by the Grand Pier with its handsome pavilion. Knightstone with its well equipped Baths and Pavilion (the Conference Hall), then an island, is now connected to the mainland by a causeway and Birnbeck Island is likewise joined to the shore by the " Old " Pier.

As a holiday centre, Weston has but few, if any, rivals, whilst its central situation makes it easy of access from all the great centres of industry. The journey from London occupies less than three hours, and an equally good train service exists from the Midlands and Northern Counties as well as from the extreme Western Towns and South Wales. The splendid facilities offered by the steam boat service make it an ideal centre for sea trips to the beauty spots of North Devon and South Wales, and the excellent public Motor Service provides a ready and convenient means of visiting the many charming and historic places for which the ancient kingdom of Wessex is famed.

One of the glories of Weston is its broad, firm, sandy beach nearly three miles in length. The fine dry stretches are perfectly safe, there are no hidden pools or treacherous quicksands, and children can play about all day, building their castles without causing one moment's uneasiness or anxiety. During the summer months the sands present most animated scenes and many and various are the attractions provided thereon for the holiday maker.

To those who delight in quiet rest and recreation amid charming surroundings, the parks and pleasure grounds of Weston must appeal. Foremost among these beauty spots come :

Grove Park.—Beautifully situated in the heart of the town, and only two or three minutes' walk from the sea-front, its natural beauty coupled with the picturesque effects of the gardener's art, make it a popular rendezvous

Photo.] GROVE PARK. [*H. Jelly.*

for all classes, save perhaps, the ordinary tripper, who prefers the sands.

Seats and shelters are plentifully supplied, and here one may sit and listen to vocal and instrumental music amidst surroundings which are seldom surpassed. The effect at an evening promenade concert, when the park is brilliantly illuminated is truly wonderful, the whole place becoming a veritable fairyland.

Clarence Park, some 16 acres in extent, at the south end of the town near the Sanatorium, is becoming increasingly popular. One half is carefully and tastefully laid out with flowers and shrubs and contains two public bowling greens, which are greatly appreciated by residents and visitors. The eastern portion is reserved for recreation purposes, and here are provided excellent public lawn tennis courts.

Ashcombe Park, 36 acres in extent, at the eastern end of the town occupies a splendid position on the slope of the hill, and commands extensive and picturesque views of the Mendips and the Channel. Here, too, tennis courts are provided, and an excellent public bowling green has been laid out.

Prince Consort Gardens, overlooking Birnbeck Pier and the Channel, are beautifully laid out with flowers and shrubs, whilst a sailing pond for miniature yachts is a great attraction for the younger visitors. A spacious shelter protects the invalid, and from this, and the numerous cosy seats and chairs, magnificent views of the Channel and its traffic are obtainable.

The Sea-front, constructed at a cost of some £40,000, and extending a distance of 2½ miles from the Sanatorium to Birnbeck Pier is one of the finest works of its kind in the kingdom. Laid out with asphalt from end to end it forms a delightful walk, and parallel to it is a magnificent marine drive. The northern half is the more popular, for here its course is more winding and offers a greater variety of views. For some distance it runs over the rocks at a considerable altitude above the sea. The promenade abounds in

sheltered nooks and ornamental rockeries, and is well equipped with comfortable kiosks and numerous seats, supplemented, in the season, by thousands of cosy deck chairs.

Anchor Head, one of the most popular parts of the Promenade, with its pebble beach and rugged rocks is very picturesque. The shelving rocks offer many sheltered niches and ledges, so much beloved by those who delight to sit by the sea engrossed in an interesting book ; while the beach below is thronged by younger folk, who revel in the

Photo.] ANCHOR HEAD. [*A. C. Thomson.*

dancing waves and frequent showers of spray. From the boating slip in the little bay, motor or sailing boats, under the care of skilled boatmen, start on their delightful trips in the Channel. When the tides are high and rough, as they sometimes are, even in summer, the Promenade above is a favourite vantage spot from which to watch the breakers dashing over the rocks.

The Grand Pier.—Cutting the main bay in two the first section of this pier with the handsome pavilion erected thereon about 300 yards from the shore, was opened in

the summer of 1904. A second section, with landing stage, has since been constructed. Apart from this, however, it forms a delightful promenade, commanding charming views of the town. The excellent concerts and entertainments in the Pavilion and the high-class band performances, besides other supplemental attractions, have tended to make this the most popular rendezvous of residents and visitors.

Birnbeck Pier, built in 1867, is in reality an iron bridge 1,100 feet in length, connecting the mainland with Birnbeck Island. Branching off northward from the island is a landing jetty for steamers, and at the south-west end of the island another pier has lately been constructed to low water, giving additional facilities for the many thousands of visitors arriving and departing by boat.

During the summer the island itself presents a most animated scene, for, so many and diverse are the attractions provided, that many visitors coming by boat often spend the whole of their time there.

On it is housed one of the several excellent lifeboats with full equipment, which it is found necessary to station in the Bristol Channel.

The Woods, covering 400 acres, are one of Weston's principal assets. At one time the site of these woods was a barren hill, but the then Lord of the Manor had the ground thickly planted with trees, and the whole is generously thrown open to the public. Visitors may roam at will, either along the well-defined main walks, or by the numerous by-paths leading to the many picturesque spots, so appreciated by picnic parties. Within these woods, at the west end of the hill is the ancient British Encampment (*see* Special Article, p. 44.) The Kewstoke Road, skirting the rocky sea-board on the one hand and the ascending forest of trees on the other, provides a combined marine and woodland drive or walk, rivalled by few, if any, in the country.

Madeira Cove.—Weston boasts of many contrasts, and one of its greatest is the change from the broad level promenade, flanked with its beautiful greensward at the south end of the town to the rockwork, with its nooks and

Photo.] THE MADEIRA COVE. *H. Jelly.*

sinuous paths at the north end. Here the most has been made of the natural position—rockwork has been built; sheltered nooks and paths constructed; a magnificent shelter erected, where many may sit in sunshine or shower enjoying the glorious views and inhaling the health-giving ozone under the most ideal conditions. Its roof has been laid out as a garden from which grander and more extensive views may be obtained. But the favourite of all is the "Cove," that snug, secluded, sheltered arena pushed into the rockwork, where in the season, morning, noon and night, crowds delight to sit and be charmed with music and song, provided by the first-class bands and entertainers engaged for that purpose. In passing it may not be out of place to mention that Weston prides itself on the excellence and number of its *al fresco* entertainments, for in the season concert parties and bands are to be found each day, not only in the Cove but in that floral paradise, Grove Park, as well as in Clarence Park. Two other concert parties are also engaged on the sands; and nothing can surpass the exquisite beauty of an evening concert in the Grove or Cove when illuminated by the thousands of fairy lamps. But to return to the Cove: In no part of Weston is the mildness of its winters proclaimed more openly than by the many interesting and rare plants with which the rockwork is planted. They need no shelter, the open is mild enough for them, and if for them, certainly for the increasing number of people who favour Weston as a winter resort. Unfortunately for himself, but perhaps fortunately for others, the day tripper avoids this part of Weston. Some idea of its attraction for resident visitors may be gained from the fact that it is necessary to provide—in the season—along this part of the front something like 2,000 chairs in addition to the large number of fixed seats.

Tides.—The entrance to the Bristol Channel is opposite Weston and not to the south. Into the wide mouth of the Channel rushes the full tidal wave of the Atlantic, which produces the well-known tidal bore on the Severn and other rivers entering the Channel on the west side, and this also accounts for the great difference between the high

and low-water levels, a difference which is not equalled anywhere around the English coast, and in this respect resembles the Bay of Fundy. It will be readily understood that with a high tide, backed by a westerly wind, Weston experiences some high and rough seas, which refuse to be confined in the bay by the seawalls, producing a grand spectacle as they leap the walls from the Grand to the Old Piers.

Knightstone.—Knightstone "Island" will be of special interest to the Delegates, because in its Pavilion the Conference will be held. Next to the Conference Hall are very fine Ladies' and Gentlemen's Swimming Baths. The "Island" shelters the harbour of Knightstone where the sailing boats and motor craft anchor, and it may be of interest to some to know the meanings of the storm cones which are hoisted on its south-west point.

STORM SIGNALS AND THEIR MEANING.

Gale probably from the South.

Gale probably from the North.

Heavy Gale, probably from S.

Heavy Gale, probably from N.

The hoisting of any of the signals is intended as a sign that there is an atmospherical disturbance in existence which will *probably* cause a gale from the quarter indicated by the signal used, in the neighbourhood (say within a distance of 50 miles of the place where the signal is hoisted, and the knowledge of which is likely to be of use to the sailors and fishermen on that part of the coast. Its meaning is simply "Look out! It is probable that bad weather of such and such a character is approaching you."

Photo] HIGH TIDE AT WESTON. [*F. & E. Phillpu*

WESTON AS A HEALTH RESORT

By C. Percival Crouch, M.B.(Lond.), F.R.C.S.(Eng.) and John Wallace, M.B.(Edin.), B.Sc., Medical Officer of Health, Weston-super-Mare.

Weston-super-Mare stands on the Semicircular Weston Bay in the Bristol Channel, looking due west on the Atlantic Ocean—the arms of the Bay being Worlebury Hill on the north, and Brean Down on the south.

Worlebury Hill and Brean Down belong to the carboniferous or mountain limestone of the Mendip Range and the soil, being thus very absorbent, dries quickly after rain—a very important feature in a health resort.

The level ground at the base of the Hills is of recent origin—alluvium to the east and blown sand on which stands the greater part of the town—nearer the shore.

It is a noteworthy fact that in looking due west from the centre of the Bay over the Steep Holm—no land intervenes between the observer and the coast of Newfoundland.

Characteristic and pleasing features of the sea front are the broad grass lawns which bound the promenade on the land side and extend for a distance of nearly a mile parallel with the sea.

These long stretches of grass form an ideal promenade for those who—while needing exercise on a level surface—are precluded by reason of tender feet or other considerations from walking on the hard pavement.

Invalids too, who suffer from inflammation or irritability of their eyes are glad to get off the white roads to walk on the green turf—for it is a noteworthy fact that while tinted glasses protect the eyes from the glare of the sun and sky above, they do not effectively protect them from the upward reflection from the white roads.

The woods with numerous winding paths—present a beautiful variety of colour in the Spring and Autumn.

One very important and valuable feature of these woods is that invalids with weak chests can walk here in peace and quiet, while a gale may be raging outside—and be hardly aware that a wind is blowing—so protected are they by the abundant trees and shrubs, and also by the fact that the woods are planted on the south side of the Hill.

Attention must be directed to the great height to which the tide rises in the Bristol Channel, at Birnbeck Pier the average is about 35 feet. Estimating the area of Weston Bay alone at 2,500 acres (almost identical with the area of the Urban District of Weston-super-Mare), there occurs four times a day an average displacement of about 4,000,000,000 cubic feet of air by the rise and fall of the tides in front of the town which ensures a change and purification of the atmosphere of Weston in even the calmest summer weather, and adds greatly to the salubrity of the climate.

Photo.] THE MARINE PARADE. [*F. & E. Phillpot.*

Climate and Meteorology.

The Meteorology of Weston-super-Mare is set out in Table I. and II.

This Table is based upon observation made by Messrs M. F. Allen and W. Allen at the Town Hall Station, Weston-super-Mare. Height above mean sea-level, 20 feet.

Table I.—Monthly Means for ten years, 1901–1910.

Month.	Temperature of Air in Month.							Rain.	
	Mean of Highest.	Mean of Lowest.	Mean Daily Range.	Mean Temperature of Air in Month.	Mean Relative Humidity 9 a.m., 1903–1910.	Amount of Sunshine.	Mean Cloud, 9 a.m., 1904–1910.	Days it Fell.	Inches.
					Per Cent.	Hours.			
January .	45·6	36·8	8·7	41·2	86	62	7·9	15·7	2·15
February	45·5	36·4	9·0	40·9	84	80	7·2	12·6	1·66
March .	49·6	37·8	11·6	43·6	80	118	6·9	15·5	2·20
April ..	54·1	41·2	12·9	47·7	75	157	6·6	13·1	2·09
May ..	60·9	46·3	14·5	53·6	72	207	6·2	13·1	1·90
June ..	65·7	51·7	14·0	58·4	71	197	6·3	12·3	2·63
July ..	69·3	56·0	13·3	62·1	73	204	6·3	11·9	1·92
August ..	68·0	54·9	13·7	61·2	74	194	6·2	15·7	3·82
September	64·4	51·0	13·4	58·0	77	148	6·3	10·3	1·80
October ..	57·8	47·5	10·2	52·7	80	94	7·3	17·5	3·92
November	50·3	40·2	10·0	45·2	85	75	7·5	13·6	2·39
December	46·7	37·7	8·4	42·5	85	41	8·5	16·7	3·19

The maximum and minimum temperatures for different periods are tabulated below.

TABLE II.

1901–1910.

	Mean of Highest.	Mean of Lowest.
January	45·6	37·7
July	69·3	54·6
Whole Year	56·5	44·8

1901–1910.	Hours of Sunshine.
October to March	470
April to September	1,107
Year	1,577

CLIMATE AND METEOROLOGY.

A study of the Tables establishes some very interesting features.

The climate is mild and equable with a mean annual temperature of 50·7 and daily range of 11·6.

The mean temperature for the six winter months, October to March, is 44·3 with an average daily range of 9·5.

The average annual minimum temperature is 44·8.

The average annual maximum temperature is 56·5.

Winds Frequency.—Owing to the orientation of the Bristol Channel and the Mendip Range of Hills the prevailing winds blow almost due East and West. An average taken over 5 years shows 112 days (30 per cent. of the possible) of West and 83 days (23 per cent. of the possible) of East winds annually.

Westerly winds prevail in March, April, June, July, August and September, and *Easterly* winds in February, October and November.

The *coldest* winds are the North-West, North and North-East, but from these most of the town is protected by Worlebury Hill.

The *stronger* winds are Westerly and the preponderance of winds off the sea largely accounts for the equability of the climate.

The average annual relative humidity is 78 and for the six winter months is 83. This is a very noteworthy feature, very low. Very few places have such a good record.

The *Rainfall* is 29·4—low for West Coast. *Rain* falls on an average on 160 *days* per annum, but wholly wet days are rare.

Fogs are of infrequent occurrence.

Frosts of any severity are most uncommon, and *Snow* is an unusual sight.

These factors go far to explain the fact that 33 per cent. of the total deaths occur at the ages of 70 years and upwards.

Water Supply.—This is in the hands of the Urban District Council and is obtained from Wells sunk in the limestone rock at the foot of Worlebury Hill to the East of the town. It is pumped to high (346 feet) and low (130 feet) level reservoirs on the hill so that a constant supply under good pressure can be delivered everywhere.

The water is hard from lime and magnesian salt, sodium chloride being also present. It is of high organic purity. The supply is practically unlimited. During the phenomenal drought of 1911 which lasted in Weston-super-Mare over 92 days with a total rainfall of over 2·65 inches, Weston was one of the last towns in England to curtail the supply, and then chiefly during the night to check the surreptitious watering of gardens.

Drainage.—Originally designed on the combined system by Sir Joseph Bazalgette, who engineered the London drainage system, it has been extended with the growth of the town and lately been partly put on the separate system. The adjoining village of Milton taken into the Urban District in 1901 has since been sewered on the separate system the sewage being dealt with by an Electric Automatic pump installation.

Scavenging.—Main roads and streets are scavenged daily besides being kept clean by orderlies during the day. The back streets are dealt with in the same way—a matter of importance in a health resort.

Photo] ROZEL SHELTER. [*H Jelly.*

House Refuse.—This is removed once, twice, or three times weekly according to the requirements of the district or of the business.

Tar Spraying has been carried out on every street in the Town by a special process invented by Mr. Brown, Surveyor and Engineer to the Urban District Council, so that Weston-super-Mare is practically a dustless town.

MORTALITY.

	1910.	1901–1910.
Death rate per 1,000	11·3	12·79
Infantile rate per 1,000	102·3	97·7
Zymotic rate per 1,000	·08	·58

NOTE.—Only two cases died from Zymotic disease in 1910.

Percentage of all deaths at 70 years and over = 33 %
" " " between 80 and 90 = 11·9%
" " " " 90 " 100 = 2·15%

The actual numbers of deaths during the ten years 1901–1910 was:

920 for ages between 70 and 100 years.
333 " " 80 " 90 "
60 " " 90 " 100 "

PREVALENCE OF DISEASE.

Diseases which benefit by Residence in Weston and Diseases for which Residence in Weston is undesirable.

Among servant-maids in the numerous lodging houses anæmia, usually associated with constipation and gastric dyspepsia is not uncommon, but inasmuch as Weston attracts a very large number of girls from the surrounding country and the Midlands, who come in on account of ill-health—a large proportion of these cases appears to be imported. True chlorosis is decidedly uncommon, and among the very large number of school children at the numerous boarding schools in the town, it is rarely seen. Anæmic children coming here for their health rapidly gain a healthy colour.

Rickets is rare either at Hospital or in private.

Rheumatic Fever is very rarely seen.

A Rheumatic Condition affecting the various fibrous tissues of the body is fairly common, as is too neuralgia, during the windy weather. Rheumatoid Arthritis does well here.

Stone in the Kidney or Bladder is practically unknown. This fact goes far to disprove the very prevalent idea that hard water is conducive to the formation of stone in kidney or bladder.

Constipation and Gastro Hepatic Dyspepsia, as in most places is fairly common among both residents and visitors of middle age who do not take sufficient exercise.

Undoubtedly the hard water has a tendency to constipate, although in the case of inhabitants who have been born and bred in the place this tendency is not noticeable.

Acute Gout is but little seen. Although a fair number suffer from an irregular form of gout, with eczema, which is apt to be rather intractable, if on a part of the body exposed to the salt winds.

Acute Nervous Conditions both organic and functional do badly, the tendency being towards aggravation. Chronic cases, *e.g.*, mild melancholia, do well.

Pneumonia is rare, as is also *Pleurisy* and *Bronchitis* in an acute form. Chronic bronchitics do well, thanks to the dry equable climate and the relative humidity being only 78 for the year.

Certain Heart Cases and those suffering from *Aneurism* should choose the level ground for a residence, and are warned to avoid the boisterous winds of early spring.

Asthmatics, as in other places, some do well, some do badly, but speaking generally they do better on the higher ground back from the sea.

Acute Phthisis—Pulmonalis does not always do well, more especially is that the case if there is any tendency to hemorrhage.

Chronic Fibroid Phthisis does quite well, better away from the sea front.

Tubercular Joints and Glands.—Do very well.

Photo.] MARINE DRIVE [*H. Jelly.*

Photo.] SPRING COVE. [*F. & E. Phillput.*

JARGE O' ZUMMERSET AND THE TAICHERS

By R. R. C. Gregory, Author of "The Cheerman o' the Booard."

Vrom up along, out o' the North,
Vrom down along, out o' the West,
Vrom Zouth an' East they d' bustly vorth,
Vor the County o' Counties the best,
Vor the land o' legend an' lore,
Vor the land o' zider an' cheese,
Vor a township zet on a zunny shore,—
And a whiff o' the zoft zea breeze.

Lards o' the compass an' rule,
Who d' thummy the chalk an' the claay,
Quanes o' the kinder-garten school—
They all be a-comen thease waay.
We'll gi'e 'em a greetin' true,
Wi' a Zummerset sheake o' the hand.
We'll tooast 'em wi' Zummerset zider too,—
Wine o' the western land.

Zummerset legend an' lore !
Ooll'ee drame o' the daays gone by ?
Into the maze o' the misty yore
Doo'ee like vor to peep an' to pry ?
Then goo to wold Glaston's town
An' stud o' the vlight o' time.
The gurt high Tar, his grassy crown,
Taake courage, and braavely climb.

'Twer to Glaston Joseph did goo,
An' planted his staff o' tharn,
That rooted, and growed, an' bloomed anew,
On every Chirstmas marn.
At Glaston, Arthur d' bide,
Mingled wi' Glaston's claay,
Wi' Guinevere turned into dust at his zide,
Waitin' the last gurt daay.

Vrom the zummit o' Glaston's Tar,
Athirt vair Avalon's vale,
You d' spy wold Camelot rising afar,
Misty, an' bluey, an' pale—
The Zummerset "Taable Round,"
Wheer the "Spotless King" did dwell
Wi' his knights zo bwold :—an' all around
Volks still o' their glories tell.

The gurt "Round Taable" now
Is at Weston a-nighst the zaay,
An' the knights zo bwold be the Taichers, who
We d' welcome wi' us to-daay.
Ees. Bwold wer' the wold knights, when
They smote wi' the sword vor Right.
The new knights vight wi' the Book an' the Pen
The Dragons o' Dark an' Night.

Ooll'ee creepy under the ground ?
Droo Mendip's hollows prowl ?
In Cheddar's Caves your plaace 'ull be vound,
Or the Caverns o' Wookey Hole.
Oh, unkid is Wookey Hole !
Wheer in gloomy zilence, alooane,
Thik witch—the wicked wold soul—
Bides, chaanged to a clammy stooane !

Ooll'ee look on a beautiful land,
Wheer milk an' honey d' vlow ?
Then up on the zummit o' Mendip stand
An' cast thy eyes below—

Visions o' archets an' vields,
Ood-lands an' purdling strames,
Wheer speckled trout to the visherman yields
A joy that d' rival his drames !

Ooll'ee look on the work o' man,
" Wold-ancient " builders' art ?
Then goo, an' the Zummerset churches scan—
The pieter 'ull waarm thy heart.
The gurt mother church at Wells,
Bath's wold gray pile zo grand—
In every parish a tower tells
O' the art o' the mason's hand.

Oh, Bladud Bath did build,
An' the Devil he viddled at Chew.
On banks o' Tone, when Ina willed
The walls o' wold Taunton grew.
Of Alfred, volk d' tell,
When at Athelney, midst o' the laakes,
How the wold ooman did cuss him well,
Vor the zaake o' a vew burnt caakes.

An' Dunstan, a Zummerset man
Wi' the Devil did wrastle an' vight !
An' Roger Baacon, in Zummerset barn,
Wer' a Taicher o' Larning an' Light.
Wolsey had more 'n his share
O' troubles, an' kickings, an' knocks—
But they larned he zummat at Ilchester,
When he zat in the parish stocks.

Wi' Taichers, zome volk d' hold
Johnny Locke vust plaace d' taake—
An' Cabot wer' bwoldest o' zailors bwold :
An' o' vighters, what about Blaake ?
John Pym wer' a Lawyer, d'ye zee,
Who'd argy an' talky—vor paay :
An' wold John Bull, you d' know about he,
An' his zong you d' zingy to-daay.

Oh, I could zing 'ee a zong—
Ef zo be as my wind ood last—
A zong wi' a hunderd varses long,
O' Zummerset's vamous past.
O' Heroes o' land and o' zaay,
O' Labour, an' Larning, an' Lore,
O' the work o' Zummerset volk awaay,
On many a var off shore.

But I must gi'e out now—
Zo, let I sheake thy hand,
" Welcome to Zummerset," I d' vow,
Is the word o' the western land.
" Welcome, O, Taichers All
To Weston, an' Weston's joys.
Luck on thy argymentations vall,
Vor the zaake o' the maids an' the bwoys."

Vor the bwoys an' maids o' to-daay,
In Britain's school an' hwome,
Be they who'll vorm thik mighty arraay,
O' the Nation that is to come.
Oh, 'tis a gurt big throng,
That d' bide by the Taichers' call,
An' zo, the refrain o' thease Zummerset zong,
Is " Welcome, Taichers All."

Photo.] GRAND PIER, WESTON-SUPER-MARE. [*F. & E. Phillput.*

Photo.] THE FONT, ST. AUGUSTINE'S CHURCH LOCKING. [*A. E. Gimmingham.*

THE EARLY HISTORY OF THE WESTON-SUPER-MARE DISTRICT

By C. H. Bothamley, M.Sc.

Weston-super-Mare is a town of mushroom growth and many still living can remember it as a mere handful of houses, but the hill on which the town stands, and the district surrounding it, have been centres of human habitation even long before our historic period. There are few places in the British Isles in which the remains of prehistoric man are more abundant, and any moderately deep excavation at the foot or along the lower slopes of the hill is as likely as not to disclose the remains of some early burial. In order to understand the condition of the district in prehistoric and early historic times we must climb to the Camp at the top of the hill or to one of the higher roads, which will give an uninterrupted view to the south and the east. It will then be seen that Worlebury Hill is a kind of island rising out of a great area of flat country with the little River Yeo running down from the valleys of the Mendip and discharging into the sea some little distance to the north. About two miles to the south the long south-western spur of the Mendip runs out at Bleadon Hill, and across the River Axe is the bold, isolated part of Mendip known as Brean Down, and out in the Channel are the Steep Holm and the Flat Holm, which are undenuded fragments of the same ridge of mountain limestone. South of Bleadon Hill and the rest of the Mendip, the River Axe follows a very winding course and empties itself into the Severn Sea, between Uphill and Brean Down. South of the Axe a great stretch of flat country runs inland as far as Glastonbury and

even beyond, broken only by the prominent isolated hill known as Brent Knoll, and a comparatively low ridge running from north-west to south-east on the southern side of the Axe. Still further south the River Parrett discharges into the sea at Burnham, reinforced by the waters of the Brue which joins it at Highbridge. A large portion of the flat country immediately east and south of Worlebury Hill is below the level of high water, and were not the sea and river banks and the general system of drainage carefully maintained, the whole district would become one vast marsh, with little islets dotted here and there, and a great island of Worlebury standing on the western edge. Such in prehistoric times was undoubtedly the condition of the country west of the Mendip, and Worlebury Hill was obviously a strong place, with the double attraction of the protection of the marshes on three sides and ready access to the sea on the fourth. Similarly the whole district between the south of the Mendip and the Parrett was then largely a marsh, and would return to that condition to-day if the sea broke through the sea wall and the sand-dunes, or if the rivers burst their banks. It is common indeed for much of this area to be under water in winter, and some years ago the breaking of the banks of the Parrett flooded the country north of it for miles. In this area it will be observed that there are no fewer than three rivers opening directly into the Severn Sea, and in earlier times the volume of these rivers was undoubtedly larger than it is now, and they afforded ready means of access to the interior of the county for the small craft which were used in those days. In comparatively recent times the sea itself must have come much farther inland between Worlebury and Bleadon Hill than it does to-day, because some half-mile or more eastward from the present beach there have been discovered rows of fishing stakes very similar to those which can still be seen round about the Old Pier. Worlebury Camp and its inhabitants and the ancient earthworks to the south are described in a separate article. Human remains discovered here have not been confined to the Camp, though naturally most of them have been discovered along the slope of the hill and not in what was then marsh. In the making of Coronation

Road above the Church a most interesting burial, or rather two burials were discovered; the first consisting of the skeletons of a man and woman, buried together in one pit in a crouching position and accompanied by fragments of broken pottery, etc. A child was buried in an adjoining pit, likewise with some pottery, and close by was a third pit containing no remains. All the pits were lined with stones. At a higher level there was a male skeleton buried in a recumbent position, and clearly of a somewhat later date. The remains thus found were of people of the Iberic type, and together with a careful drawing showing the exact conditions of the burial made by a very competent local antiquarian and geologist, Mr. H. N. Davis, F.G.S., who superintended the excavation, they can be seen in the Museum attached to the Free Library. Here also is exhibited the latest discovery, in the shape of a male skeleton found in Worthy Place, quite at the foot of the hill. This is of quite special interest, because it seems clear from the measurements of the skeleton that the man was not of the Iberic, but of a distinctly non-western type, and it is probable that, if not a Roman, he was at least one of the Roman legionaries from Eastern Europe or beyond. At the eastern end of Worlebury Hill, beyond the village of Worle, is a mound which until quite recently was surrounded by a ditch and which is known as Castle Batch. It may have been intended as a stronghold or small outpost of Worlebury Camp, but it is also not impossible that it may have been merely a burial tumulus. As stated in another article, it is probable that the occupation of Worlebury Hill and its Camp by men of the Iberic race continued for some years after the Roman occupation, and was only terminated by the assault which resulted in the destruction of the Camp.

Of the Roman occupation the remains are not abundant, the marshy character of the district at that time no doubt preventing the erection of permanent buildings in any large number. Nevertheless, the district was of considerable importance, because part at least of the produce of the lead mines of Priddy and Charterhouse-on-Mendip were brought along the old British trackway down Bleadon Hill to the mouth of the Axe. There is also good reason to

suppose that the sea banks in the neighbourhood of the mouth of the Axe, if not actually Roman, occupy the place of older banks which the Romans built with the same object. The evidence in this direction is interesting. At a place called Wemberham, not far from Yatton, there were discovered the remains of a considerable Roman house about 150 feet in length and 65 feet in breadth close to the bank of the river Yeo, and so placed that its floors are below high-water level. It is clear, therefore, that before this villa could have been built the river must have been embanked and the district drained to a considerable extent, the sea being kept out by other embankments. There are further indications that at some later time, after the Romans had left, the district became at least partially flooded again, probably owing to the breaking of some banks. It seems clear that after having established themselves on the Mendip, the Romans set to work to carry out important sea defences and works of drainage similar to the much greater works of the same kind which they carried out in Lincolnshire and elsewhere. Objects from the Roman house at Wemberham, with a plan of it, may be seen in the Museum. Remains of Roman houses also exist near Congresbury and near Banwell but have not been properly examined.

Between the Roman departure and the firm establishment of a Saxon Kingdom in Wessex little is recorded. Incursions from Wales, and also from Ireland, either direct or across Wales, there doubtless were, for the Yeo, the Axe, and the Parrett, are the only waterways opening into the Severn Sea on its southern side. Later on the same rivers served the Northmen as means of ingress and egress in this part of the country. Towards the end of the sixth century Ceawlin, the West Saxon, after defeating the Britons in Gloucestershire, made himself master of the northern part of Somerset as far as the River Axe, including Worlebury and its surroundings, which thus became for ever a part of the kingdom of Wessex. In 845 the "Anglo Saxon Chronicle" tells us that Eanwulf the Alderman with Bishop Eahlstan and the men of Somerset, and Osric the Alderman with the men of Dorset, "fought at the

mouth of the Parrett against the Danish host, and there made great slaughter and got the victory." The great struggle of Alfred with the Danes round about the Isle of Athelney was outside our district, but after the battle of Ethandun, when peace had been made with the defeated Guthrum, Alfred received him as his godson at baptism, and, says the Chronicle, "his chrism-loosing was at Wedmore" which is but 11 miles away beyond the River Axe.

Not very many years after Alfred's death, in the year 918, there came into the mouth of the Severn a great ship-host of Danes with two earls, Ohtor and Harold. They

Photo.] FLAT HOLM. [*F. & E. Phillput.*

had been harrying Brittany, and now, the Chronicle tells us, they harried Wales by the sea-coast as they pleased. They were, however, beaten by the men of Hereford and Gloucester and made to give hostages to clear out of the English kingdom. They did not, however, intend to keep faith, but King Edward, we are told, had shown foresight and had arranged so that his soldiers occupied all the south side of the mouth of the Severn from Cornwall as far west as the mouth of the Avon. The Danes tried to steal inland at night, once at Watchet and once at Porlock, but they were well beaten and only those escaped who

were able to swim to the ships. After these repulses they took refuge on the Flat Holm, where they had to remain so long that they were quite destitute of food, and many men died of hunger. Then the survivors managed to get away to Wales, and afterwards to Ireland.

Of the Saxon occupation of the district there are very few material remains.

In the records of the Norman Conquest and the years immediately following we find little mention of Somerset, but there is one pathetic record relating to this district. The year after the fatal fight at Hastings the Chronicle tells us that Gytha, mother of the dead Harold, and the wives of many good men with her, took refuge on the Flat Holm and there dwelt for some time, afterwards going across the sea to St. Omer.

Like the rest of the country, Somerset was soon parcelled out amongst the various followers and supporters of the Conqueror, and an examination of Domesday led the late Bishop Hobhouse to construct a map of the county showing as nearly as possible how at that time the present parishes were divided amongst the Norman owners. Of course the parishes as such were then non-existent, the land being held in the form of Manors. Kewstoke, Weston, Locking and Hutton belonged to the Bishop of Coutances, who also had much other property in the county; Worle and Brean were held by Walter of Douai; Uphill, with Christon, which is on the other side of the hill, by Serlo of Burci; Bleadon by the Bishop of Winchester; Loxton by Count Eustace of Boulogne; Wick St. Lawrence and Congresbury belonged to the King himself; Yatton, Puxton, Banwell, and Churchill to the Bishopric of Wells; and Winscombe and Shipham to the Abbey of Glastonbury. Remains of Norman architecture are fairly frequent and some of them of considerable interest. The little early Norman church of Christon is one of the best examples of the kind to be found anywhere, and there is a Norman door and some other remains of later date than Christon in the adjoining parish of Loxton. Uphill old church has an interesting Norman door, distorted by settlement, and probably considerable parts of the walls belong to the

same period. Kewstoke has a beautiful late Norman doorway under the south porch, and there is some early work, probably late Norman, in the western parts of the church at Worle. There is also a Norman font of considerable interest at Locking, and another at Congresbury.

Photo.] NORMAN DOORWAY—KEWSTOKE CHURCH. [*P. B. Burroughs.*

Of the succeeding centuries the records are fewer. The most noteworthy event affecting the neighbourhood at the beginning of the thirteenth century was the founding of the Priory at Worspring, beyond Kewstoke, about 1210. This was a small Priory of Austin Canons following the rule of St. Victor. It was founded by William de Courtenay, a grandson of that Reginald Fitz Urse of Williton who was one of the four murderers of Thomas-à-Becket. The considerable remains of the Priory building which still exist are of later date. Thirteenth century architecture in the district is represented by the fine work in the nave arcade of the church at Congresbury.

The fourteenth century left little mark on the area with which we are dealing, but, as in the rest of the county, the fifteenth century left a great legacy of beautiful church buildings like those at Yatton, Banwell and Kewstoke, with remains of interesting domestic architecture of the same period at Banwell, Hutton, and Congresbury.

From the fifteenth century until modern times the district has little history that is important. The great wave of prosperity which spread outwards from Bristol during the sixteenth and seventeenth centuries, and which has left its mark on many parts of the county, passed by Worlebury Hill and its immediate surroundings. In those days it was not, and indeed it is not now, a readily accessible place by road. The main highways cross the Mendip some miles away, and the waterways, which in earlier time had been sufficient for the small vessels then used, were no longer available for the larger ships which now brought wealth from the Spanish Main. They sailed past the mouth of the Axe and past Worlebury Hill, carrying their precious cargoes with them to find harbour through the deep gorge of the Avon and make the wealth of the ancient port of Bristol.

Photo.] WESTON WOODS (WORLEBURY) [*T. G. Goodman.*

WORLEBURY CAMP AND OTHER ANCIENT EARTHWORKS.

By C. H. Bothamley, M.Sc.

If from the Weston-super-Mare sea-front we look northwards towards the hill which shelters the town on that side we can see, at the foot of the trees which crown the western end, what looks like a long, low wall of white stones, which at a certain point, turns through the trees to cross the headland. A wall indeed it is, but by no means so prosaic or so simple as it looks at a distance. It is the long southern defence of a great prehistoric camp which occupies this end of the ridge, and is one of the most interesting remains of its kind in the whole kingdom.

Worlebury Camp, as it is called, is important not only because of the peculiar structure of its defences, but also because the human and other remains found in it have thrown more light upon the nature and state of civilisation of its inhabitants than has been the case with any other similar prehistoric camp in the country. The camp can be reached by a steep flight of rude steps on the hillside at the end of a back road behind Kewstoke Terrace. Take the first turning to the left when proceeding along Camp Road from the Prince Consort Gardens above the Old Pier. Another approach is through the woods at the eastern end, by climbing a path into the wood at the top of Queen's Road or at the top of Arundell Road. A broad and fairly level footpath runs along the ridge, and when this is reached from either of the paths just named turn to the left and proceed in a westerly direction. You will first come to a shallow ditch with a low stone bank on its

westward side, cutting across the ridge and running down the hill to the north and south. On the south it soon turns at a right angle and runs west to join the next ditch. The ditch is partly filled up with stones, and both ditch and bank are overgrown and easily escape attention if not carefully looked for. About 150 yards further, in the same direction, may be seen a second very similar bank and ditch running in a similar direction across the ridge. Its southern end also turns westwards to join the main defences. These are the advance works of the fortification, and were intended to check an enemy approaching from the fairly level ground on the top of the hill to the east. The banks were originally higher and may have been strengthened by a palisade. It has also been conjectured that the space between the two banks and ditches formed an outer enclosure for cattle. Some 60 yards still further west we meet with a series of four banks and four ditches made in the solid rock, and beyond them the great outer bank of stone, about 15 feet high, roughly semicircular. All these advance works run across the ridge and gradually die out on either side. They were necessary because this is the only readily accessible face of the camp, the hill-top being more or less level for a considerable distance to the east. Just behind the great outer bank, but with a broad ditch between them, is the semi-circular eastern end of the main rampart of the fortification, 15 to 20 feet high. On the northern side it soon dies out, because the slope of the hill soon becomes so precipitous that little or no artificial defence was necessary. On the southern side, however, it continues in a westerly direction to a well-marked re-entering angle, and beyond this still continues, following the natural line of the hill, towards the precipitous western end. Below, along the southern front, there can still be traced the lower ditch, now filled with stones, but, like the bank above, following the natural line of the hill. The main rampart and the outer rampart at the east end seem at present to be merely irregular banks of loosely piled stones, but careful examination has shown that the structure was systematically built by a careful piling of the stones one upon the other so as to form a wall with a well-marked face, but no

Photo.] WORLEBURY CAMP, MAIN RAMPART. [*T. G. Goodman.*

Photo.] WORLEBURY CAMP (TWO RAMPARTS). [*T. G. Goodman.*

mortar or cement of any kind was used ; the construction was what is known as " dry masonry." The broad mass of the rampart was constructed by building several walls of dry masonry of this kind, one against the other. It is probable that the outer wall was the highest, with the walls behind it successively lower and lower, forming a series of steps. At present, of course, the middle wall is highest, and it can be distinctly seen along the top of the outer rampart on the east, and also—but less distinctly—in places along the top of the main rampart at the east end. At one or two points towards the east, holes which have been made in the bank show quite clearly the carefully laid faces of the inner walls. This peculiar structure of walls of dry masonry built one against the other is uncommon, but occurs in some of the prehistoric fortifications in Wales and the west of Ireland. The principal entrance to the camp was in the re-entering angle already referred to, and the roadway, wide enough for chariots, ascended the hill somewhat steeply from an ancient road running along its base, and passed into the camp between high walls guarded at the outer ends by two roughly constructed towers. There was another entrance passing through both ramparts at the north-east corner, and a third, very steep and narrow, at the west end. This was probably used mainly as a means of access to a spring which existed at the western base of the hill, but which was destroyed in making the Old Pier. The camp, enclosed by the rampant on the east and south and the precipices on the west and north, is approximately a long oval in shape and occupies about 10½ acres, its greatest length being somewhat more than 500 yards, and its greatest breadth 140 to 150 yards. It is divided into two parts by a cross ditch a little to the north of the main entrance, and the eastern and higher part thus cut off is regarded as the citadel or " keep " of the camp.

The most striking feature of this camp, apart from the peculiar structure of its rampart, is the existence of some ninety-three artificial pits, most of which occur in the neighbourhood of the main entrance, although there are many in the eastern end of the enclosure. These pits vary

much in size, from roughly 6 feet across to as much as 10 feet across, and they vary also from about 4 feet to 8 feet in depth. When they were discovered, low banks were discernible round the pits in several places, and they can still be seen in one or two instances, but are much overgrown. It seems clear that the pits were intended as a kind of underground basement or storehouse to huts which were built over them, and their existence shows that this

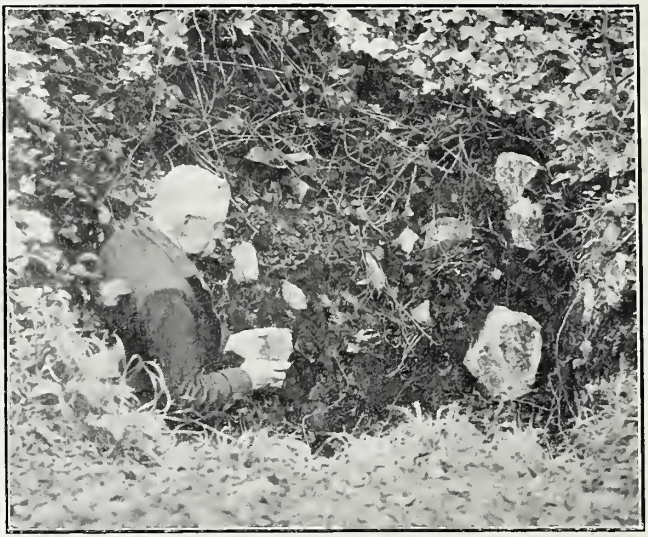


Photo.] ARTIFICIAL PIT—WORLEBURY CAMP. [*T. G. Goodman.*

camp was an actual place of residence and not like so many others, merely a place of refuge in time of danger. Most probably tree-trunks were laid across the pits and a circular hut of old bee-hive shape constructed over them of wattle and daub. When these pits were examined some sixty years ago they were found to contain human remains, as well as remains of clothing, food, and domestic animals and domestic appliances of various kinds, and a quantity

of charcoal and burnt wood. Some of the most interesting of the finds can be seen in the Museum attached to the Free Library and others are in the Museum at Taunton. Portions of at least eighteen skeletons were found, including those of men, women and children; in some cases there were two or three skeletons in the same pit. At least half of them have marks showing the use of sharp-cutting weapons, which must have been of a very serviceable kind and used with considerable skill. The other remains in the pit show abundant signs of having been burnt, and it is clear that the camp was literally ravaged with fire and sword. The evidence on the whole makes it probable that this final overthrow of the camp took place in or about the year A.D. 47, the attackers being a Roman force under Vespasian. After the slaying or dispersal of the inhabitants the walls of the camp were probably thrown down in order to make it no longer defensible. The inhabitants, so far as can be deduced from their skeletons, belonged mainly to that ancient Iberian type which occupied so much of western Europe in prehistoric times and which still survives in many places. The remains found in the pits with the skeletons show that these people kept various domestic animals, such as the pig, the ox, the horse, and the goat; cultivated cereals; were acquainted with the art of weaving and also with the use of bronze and of iron. Their pottery was somewhat rude and coarse. Their state of civilisation corresponded with the period when the bronze and the iron ages overlapped.

From Worlebury Hill, looking south, south-east, and south-west, there can be seen other prehistoric strongholds. On Brean Down, towards its eastern end, there is a bank of stones with a well-marked ditch on its western side. This was clearly intended as a defence from the mainland against any enemy coming by water and landing at the western end of the town. At the western end of the down there is a beacon platform, round which are low straight banks, forming small rectangular enclosures, but what they really were is unknown.

Somewhat inland, and almost due south, rises the prominent hill of Brent Knoll, the upper part of which was formed

into a camp with a double bank and ditches, but little has been discovered to throw any definite light on its age or its inhabitants. It was probably a refuge camp, for a tribe living on the elevated plateau below it. Still further inland, largely hidden by trees, there is Banwell Hill, on the eastern end of which there are some remains of a camp similar to that on Brent Knoll, and beyond, in a direction east by south from Worlebury, crowning one of the most prominent off-shoots of the Mendips, can be seen the great stone rampart of Dolbury Camp, larger even than that at Worlebury. It is about 525 yards long and 250 yards broad, and its main defence is a rampart of stones rising in many places to as much as 20 feet high. At its base is a ditch and outside this a second but lower rampart. This defence encloses the camp on three sides, but on the south there is a precipitous cliff, and here the bank is very low or is non-existent. The principal entrance was originally by a steep path at the western end, but the lower part of it has been quarried away. As at Worlebury, there is an advance work in the shape of a ditch cut across the ridge outside the eastern end of the camp where the approach was easiest. There was also a second entrance at this end crossing both ramparts, which are here very strong. The general course of the rampart follows the natural line of the hill. As at Worlebury, the camp still contains a considerable quantity of dry masonry, but of a different type ; in this case it is the lower part of the stone bank that was built up carefully with a distinct vertical face, and on the top of this were piled the stones forming the upper part of the defence, very much in the same way as a railway embankment is constructed to-day. Across the valley to the west there are remains of another but smaller stronghold called Dinghurst Camp, very much of the same type, consisting of a double bank and ditch, but largely destroyed by surface mining. Very little has been discovered in either camp which throws any light on their age. The finds in Dolbury are in fact limited to Roman and Saxon coins, iron spearheads, and some other weapons, a few fragments of crude gray pottery, and a few flint flakes. It is probable that the construction of most of these camps dates from

the bronze age, but, occupying as they do the most readily defensible positions, they were doubtless used successively by the various people who took possession of the country, both in prehistoric and early historic times.

The occurrence of several of these camps in sight of one another has led to the hypothesis that they were so arranged in order that the occupants might signal to one another when occasion arose. This, however, is mere conjecture. The distribution of the camps was determined mainly by the physical features of the country and at the time when they were made the inhabitants had not reached that stage of civilisation which is implied by concerted strategy involving the arrangement of chains of signalling positions.

On the western slope of Bleadon Hill there are low straight banks crossing one another at right angles. These most probably were connected with some early arrangements for tribal or communal cultivation.

Photo.] WESTON FROM THE ENCAMPMENT [*H. Jelly.*

Photo.]

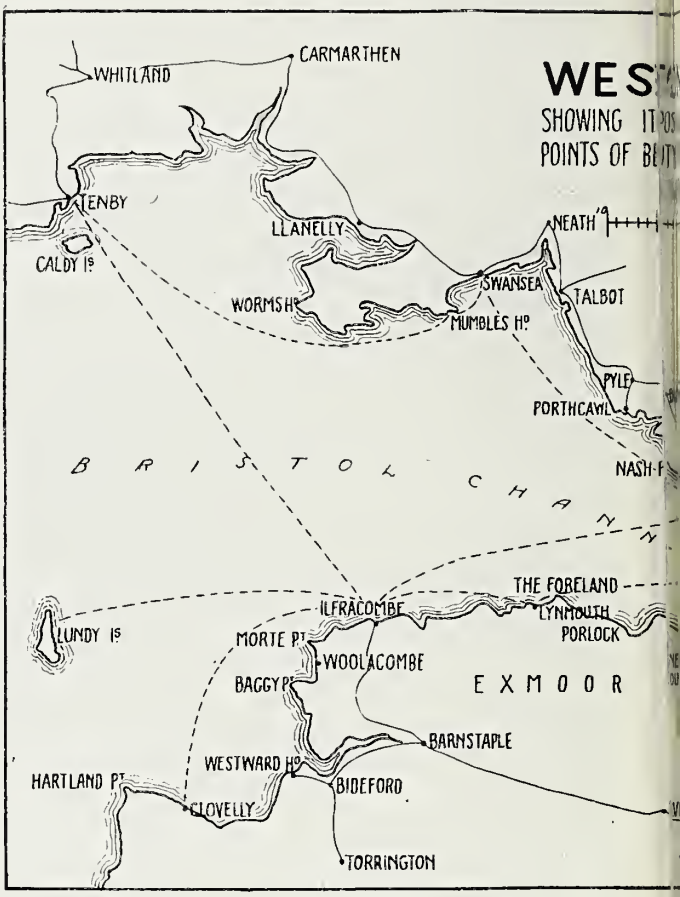
THE BRISTOL CHANNEL

When the Thames was a tributary of the Rhine, and the Seine flowed through what is now the English Channel, the depression now forming the bed of the Bristol Channel was a fairly level plain, probably broken with a few isolated hills, through which the Severn and other rivers flowed to join one having a north and south direction between England and Ireland.

Submerged forests of post-glacial age occur at Sharpness, Porlock, and Watchet, showing that the ancient plain was well wooded, and from the fossils which have been dredged up, or discovered in the Caves of the Mendip Hills, it is evident that at that period many huge extinct mammals, together with early man roamed over the district.

To-day the Channel is one of the busiest shipways around the coast. On the Welsh side to the north-east is Newport, and its novel Transporter Bridge across the mouth of the river is visible from Weston on a clear day. Further south, but almost opposite Weston, at a distance of about 12 miles, is Cardiff—the capital of Wales—and Penarth, its residential suburb, with its " Beds " so full of interest for the geologist, and its sheltered roadstead so welcomed by the mariner when the western gales force him to seek shelter. Further south still is Barry—the newest of the Channel ports—with its gigantic-deep water docks, and its ingenious machinery for handling the coal from the pits around it.

On the English side of the Channel, at the mouth of the Avon, are Avonmouth and Portishead, two feeder ports for Bristol ; further south is Clevedon, and then the bold promontories of Sand Point and Worlebury, which protect Weston and its bay from northerly winds. South of Weston Bay is Brean Down, separating it from Bridgwater Bay. The Down is of special interest ; at its sea end is an abandoned fort, which up to a few years ago formed one of the chief defences of the Channel, now it is one of the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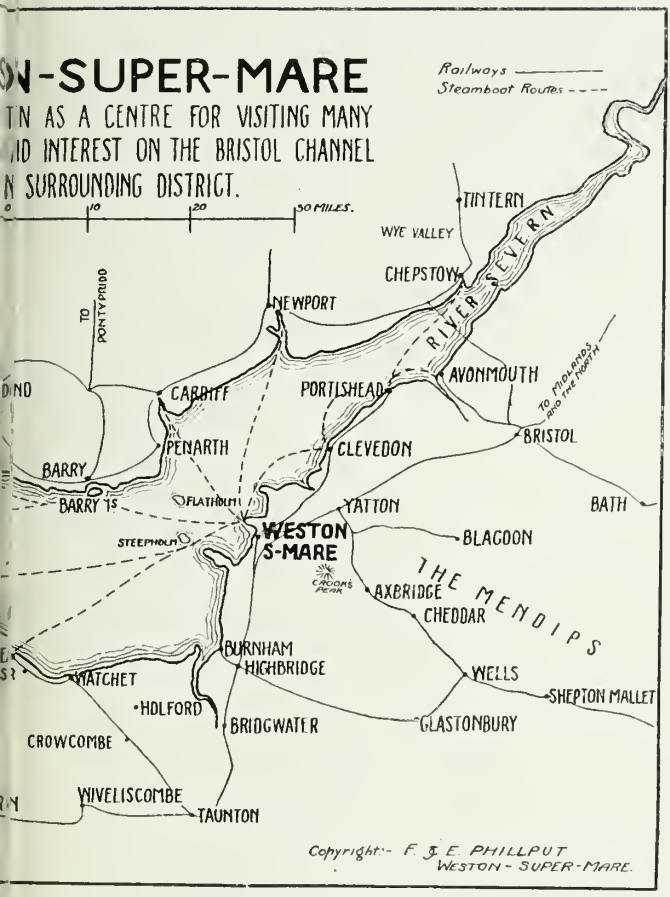
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CLEVEDON
BARRY
BARRY I.S.
FLATHOLM
YATTON
BATH
STEEPHOLM
WESTON S-MARE
BLAGDON
CROOKS PEAK
AXBRIDGE
CHEDDAR
THE MENDIPS
BURNHAM
HIGHBRIDGE
WATCHET
WELLS
SHEPTON MALLET
HOLFORD
BRIDGWATER
GLASTONBURY
CROWCOMBE
WIVELISCOMBE
TAUNTON
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WESTON-SUPER-MARE.

few " Official Sanctuaries " for wild birds in this country. The Down is open to visitors, and may be reached by ferry across the mouth of the River Axe, or by motor or sailing boat from Anchor Head. Owing to the number of rare wild plants growing on it—one of which, the White Rock Rose—is only found in one other place in England, it is visited by a large number of botanists each year.

In Bridgwater Bay is Burnham, a small health-resort, which has a fine sandy beach and a noted Golf Course. An excellent Pavilion and ferro-concrete promenade were constructed last year. Further south the coast begins to rise into that glorious mass of rugged rock for which this part of the Channel is so well-known. Several interesting places are found here, Minehead, the inlet to Exmoor, the land of the wild red deer, Lynton and Lynmouth, described by Southey as the finest spot he ever saw except Cintra and Arrabida, and on approaching it by steamer one realises its right to the title of the " Switzerland of England." Further on is Ilfracombe, a topsy-turvydom of rocks, from whose tops some of the finest views obtainable in the country may be seen, and scattered in its hollows is the fair and pleasant town and harbour. The waves of the Atlantic break at the foot of the Tors, the Capstone Hill, and Hillsborough, with majestic effect when weather is rough. The Capstone Parade, the Tors Walk and hill paths are very enjoyable, and as they can be reached in little over two hours from Weston the trip is a very popular one. Morte Lighthouse and Woollacombe Sands are within a few miles. South of Barnstaple Bay is Clovelly, the quaintest of quaint places, set on the steepest of hill sides, surrounded with ancient trees and tangled undergrowth, lichen-covered cottages, the base of one level with the roof of its neighbour, cobbled terraced streets, the like of which cannot be seen elsewhere, and the picture completed with inhabitants of the real hardy fisherfolk type.

The Channel is not an easy one for navigators. Currents and banks are numerous, and several islands add beauty to the scene and danger for the mariner. That granite plateau—Lundy Island—is generally considered the western limit of the Channel. Looking across from Weston two

Photo.] WATERS-MEET—LYNTON. [*M. Cooper.*

islands may be seen, Steep Holm on the left, and Flat Holm on the right, the former 5 and the latter 7 miles from Weston, both are formed of mountain limestone, and are apparent continuations of Brean Down and the Mendips. On Flat Holms is one of the chief Channel lighthouses, as well as a foghorn, whose range of sound is 20 miles. On a clear night the lights of Newport, Cardiff, Penarth and Barry may be clearly seen from Weston, as well as the lights from some half dozen lightships and lighthouses. The fair-way for ships is nearer the Welsh than the English coast. The small Channel between the Old Pier and the Weston sea wall is one of the most lucrative sprat catching areas around the coast, and fish of a larger kind are very plentiful in Weston Bay.

Inland Places of Interest

Bridgwater.—A typical English country town on the banks of the navigable River Parrett. The famous Admiral, Robert Blake, was born at Bridgwater. In the church of St. Mary, which has a very fine tower, hangs the famous picture, " The Descent from the Cross," believed to be the work of Murillo.

Taunton.—A town of great antiquity, situated in a healthy position in the lovely vale of Taunton Deane, spoken of three centuries ago as the " Paradise of England." An object of great interest is the castle founded in the eighth century by Ina, King of the West Saxons. Taunton was the scene of many strenuous struggles during the great Civil War, and is famous as the place where the ill-fated Duke of Monmouth made his regal declaration, and where Judge Jeffreys held the Bloody Assize.

Athelney.—A picturesque little village known as the Isle of Athelney, with many old-world associations. It was amongst the wilds and morasses of this once desert region that Alfred the Great took refuge, and if legend be true, where he burnt the cakes in the shepherd's hut. The battle of Sedgemoor was fought close by.

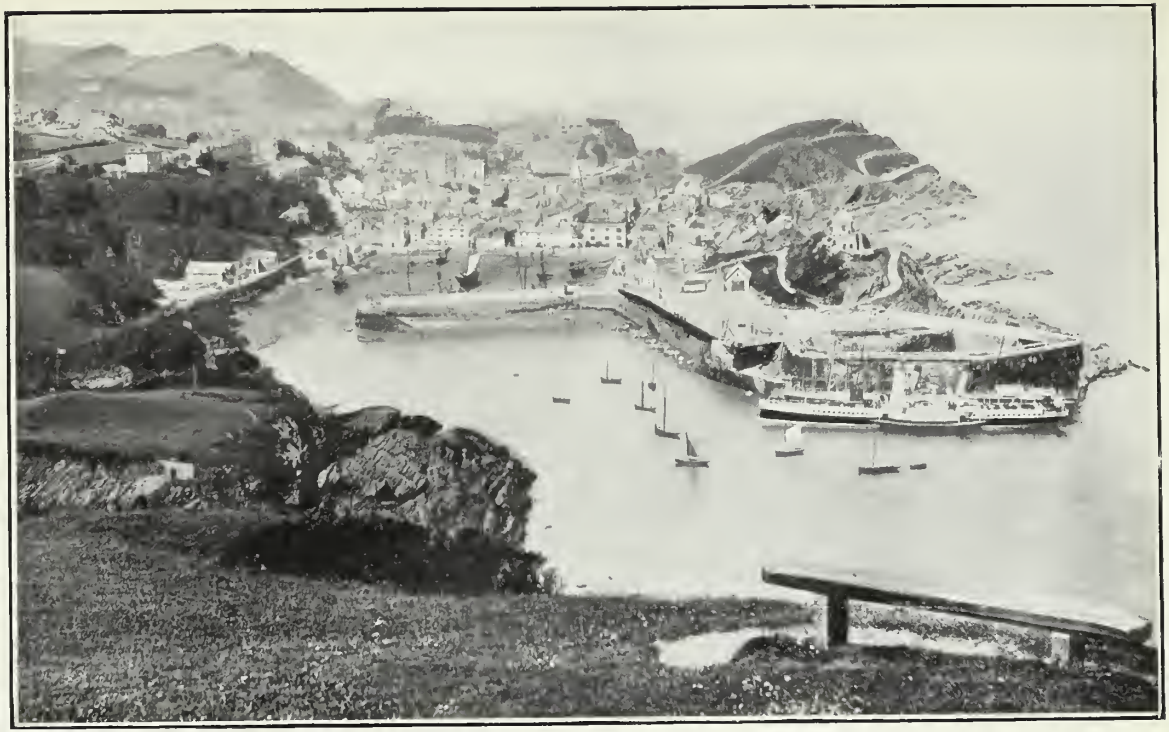


Photo.] ILFRACOMBE. [*H. N. Percival.*

CLEVEDON

THIS pleasant and popular watering-place, with a population of nearly 6,000, is one of the healthiest in the United Kingdom. Some 6 miles from the confluence of the Severn and the Avon and 13 miles from Bristol.

Looked at from the sea or from the top of Wain's Hill the town appears to be set in an old-world garden where all is rest and peace. It rises from the sea-shore by three natural terraces, each having easy communication with the other, and giving as many gradations of climate.

Shut in on the north and east by the hills it is protected from the cold northerly and easterly winds, but is open to the prevailing westerly and south-westerly winds which come straight across the Atlantic impregnated with the health-giving elements of that remarkable ocean.

It is admitted that there are few towns in England, with the exception of those in Cornwall, which have such a mild winter temperature as Clevedon; and the dryness of the atmosphere and almost entire freedom from land and sea fogs make it an ideal winter resort.

Facing south and south-west, it secures the maximum amount of sunshine and consequently enjoys a far milder climate than many towns on the south coast, and in the difference between its day and night temperatures compares favourably with the Riviera. Snow rarely falls, and when it does seldom remains long upon the ground.

The soil and subsoil are sand lying upon carboniferous limestone, and the roads, which are good, dry quickly. The sanitary arrangements are all that can be desired, and the water supply is excellent.

The seashore, which is of shingle, broken by rocky masses, is bordered by an esplanade rather more than half a mile in length, not a stiff and formal promenade.

The Green Beach, the most popular and fashionable portion of the Front, and one of the leading attractions of

Clevedon—The Esplanade.

the place, consists of an extensive plateau of greensward at an altitude of some 35 feet above the shelving beach. The pier, which is at the east end of the esplanade, although not conceived on imposing lines, has been much improved, and the largest pleasure steamers can land and embark their passengers at all states of the tide.

Overlooking the pier is Dial Hill, from which a magnificent view is to be obtained. From the neighbouring hill of Bella Vista a magnificent view is obtainable of the beautiful Swiss Valley, which so well deserves its name.

When on Dial Hill the visitor cannot fail to notice the ruins of Walton Castle. Around it are the Clevedon golf-links of eighteen holes, where in addition to a fine test of golf on a well kept course, players have magnificent views of the Bristol Channel, the Welsh Coast and the County of Somerset.

Within a few minutes' walk of the Swiss Valley is Clevedon Court, the ancestral home of the Eltons.

The exact date of the erection of the first Court or Manor House cannot definitely be ascertained, but it is almost certain that a dwelling house was built on the site prior to the time of the Norman Conquest.

The present mansion was doubtless built in the reign of Edward II., by the De Clivedens, and it is worthy of note that for several generations, it was the residence of members of the Wake family, descendents of the famous Hereward; one Sir Roger Wake, being attainted in parliament for espousing the cause of Richard III. Since that time it has been much added to, and portions have been rebuilt, so that to-day the fine old manorial mansion awakens not only the interest of the antiquarian, but the admiration of the visitor.

In the grounds is the "Sunflower" pottery where the famous Elton ware is made under the personal supervision of the present kindly and genial lord of the manor, Sir Edmund H. Elton, Bart., the founder of this remarkable and successful industry.

But Clevedon Court, has, if possible, even greater attractions. It is certain that Thackeray wrote, at least a portion of "Esmond," whilst visiting at the Court, and that the beautiful old mansion is the original of "Castlewood." Henry

CLEVEDON COURT.

Hallam, the historian, married a daughter of the house, and Tennyson, who was among the famous visitors at the Court, must have loved to wander through the beautiful gardens and grounds and over the surrounding hills and dales of Clevedon.

The Parish Church, dedicated to St. Andrew, stands upon the western side of Church Hill, and being built near the edge of the cliff has long served as a conspicuous land-mark to the sailors passing up and down the Channel.

It is built in the form of a cross, the tower being in the centre, and here in the shelter of this dear old church, "By the broad water of the west," "Within the hearing of the wave," sleep the Hallams and the Eltons.

No mystery now attaches to the initials A. H. H. (Arthur Henry Hallam), whose great friendship and early death wrung from the heart of Tennyson that spirit-haunting poem, beginning

> "Break, break, break,
> On thy cold grey stones, O sea."

with its heartbreak for the loved and lost :

> "And the stately ships go on
> To their haven under the hill ;
> But O for the touch of a vanish'd hand,
> And the sound of a voice that is still ! "

and later on the unparalleled and deathless "In Memoriam" tells how "in the dark Church like a ghost" his "tablet glimmers to the dawn."

One other interesting spot in Clevedon is the cottage on the right of Old Church Road to which Coleridge brought his genial and gentle bride, Sara Fricker, in October, 1795, and in this primitive dwelling, built under the bold escarpement of Hangstone Hill, the author of the "Ancient Mariner," and of the weird and marvellous "Christabel" spent the happiest hours of his life. In the years immediately following his residence here all his finest poems were written. His twenty-fifth year has been called his "annus mirabilis," and here he spent his twenty-fourth. That he loved his lowly cot is certain, for on leaving it he wrote :

> "My spirit shall revisit thee, dear cot,
> Thy jasmins and thy window peeping rose."

THE AVON GORGE

By S. H. Reynolds, M.A., Sc.D., F.G.S.,
Chaning Wills Professor of Geology in the University of Bristol.

In the lower part of its course from the uplands near Sodbury to the Severn flats near Shirehampton the valley of the Avon is characterised by scenery of great and varied beauty. Above Bath the richly wooded slopes which sweep down to the winding river's edge have a charm for the eye greater perhaps than that which is afforded by the Avon Gorge. But few can deny that the view of that Gorge from the Suspension Bridge or from Observatory Hill is at any rate the most remarkable and striking feature of the scenery of the Avon. And for those whose interests are scientific it is here that one is brought into closest touch with the most varied episodes in the history of the district which the Avon drains. Of these episodes an attempt is made in the following pages to give an account in language as free as possible from technicalities.

(1) We may take first the scenic features.

Between Bath and Bristol the Avon runs in a wide open valley, which extends westwards to the Severn, and forms the gently undulating and low-lying country stretching from Long Ashton to Tickenham and Nailsea, and thence on to the mouth of the river. The Avon, however, instead of following what seems to be its natural course through this low-lying country, bends sharply to the north and runs through the narrow and deep gorge between the Downs and Leigh Woods, once more entering low-lying country near

Sea Mills. How did this gorge come into existence, and why does the Avon follow such a peculiar course ? *

(*a*) The first explanation that would occur to most people is that the gorge was produced by the splitting action of some mighty earthquake. If this were the cause the rocks seen in the quarries on one side of the gorge ought to slope away from those on the other side, or at any rate give evidence of dislocation ; but on both sides the rocks slope in precisely the same way, *i.e.* up the river, and there is no sign of dislocation.

(*b*) The second view regards the Avon Gorge as having been cut by the overflow channel of a glacier lake which it is suggested may during the Glacial Period have occupied the low country between Bristol and Bath. According to this view the Avon valley had its original outlet, *via* the Long Ashton and Nailsea valley, blocked by a mass of ice, which formed a barrier behind which the waters of a lake gradually accumulated till they overtopped the Downs. An overflow channel then began to form which eventually as it deepened gave rise to the Avon Gorge. In support of this view there is little or no evidence ; neither the ice barrier, nor the supposed lake have left any distinct or recognisable traces of their existence.

(*c*) The third explanation is that the Gorge marks the original course of the river,—that it is the work of running water and was in fact produced by the Avon itself. It is not however implied that the Avon which produced the gorge was the sluggish tidal river of the present day ; as will be pointed out in the sequel, the Avon was probably once a swift stream draining an area standing at a far higher level than its present basin.

The formation of a river valley is a two-fold process : in the first place there is the downward-cutting action of the main stream which tends to *deepen* the valley, and in the second place there is the work of rain, frost and the tributary streamlets which tend to cut back the sides and *widen* the valley.

* This subject has been fully discussed by Prof. C. Lloyd Morgan, *Proc. Bristol Nat. Soc.*, N.S., Vol. IV. (1883-4) p. 171 *et seq.*

In the case of the Avon Gorge the former of these processes has predominated; in the case of the Avon valley between Bristol and Bath the second process has been equally efficient. The reason for this difference is probably that the rocks of the Avon Gorge consist in the main of hard limestone traversed by well-marked divisional planes,—a type of rock that does not readily yield to frost and rain, and therefore does not crumble away to form a wide, open valley. The rocks on the other hand between Bristol and Bath are in the main relatively soft sandstones and marls, easily eroded, and similar rocks extend on past Long Ashton to the Nailsea neighbourhood. Why then did the river not follow the soft rocks throughout and avoid the hard rocks of the Downs altogether?

To understand its present course, one must realise that when the Avon began to flow its direction was determined not by the rocks now forming the surface of the ground, but probably by a westward extension of the Oolitic rocks, now seen near Bath, and of the Chalk of Salisbury Plain, both of which rocks undoubtedly once extended far to the west of their present limits. After its first emergence from beneath the sea, a river system was established on the plain formed of these rocks, which completely smothered those now visible at the surface, the direction of the streams being determined solely by the slope of the ground, and having no relation to the lie of the older rocks buried far beneath. In course of time the old rocks of the Downs, etc., were laid bare owing to the removal by the action of rain and streams of the Chalk and Oolite which covered them, but the rivers continued to follow in the older rocks the same courses that they had originally established in the covering of newer rocks. It is a generally recognised geological principle that when once the course of a river has been established, it is only under very exceptional circumstances that that course is deserted.

(2) While to most people the Avon Gorge is most interesting from the scenic aspect, to the geologist it is at least equally interesting because it provides such a magnificent section of the Carboniferous Limestone rocks. The river

cuts these rocks nearly at right angles, and as they are tilted up so as to slope at an angle of about 40° to the south, the whole thickness of some 3,000 feet is passed over in a distance of about 1½ miles.

The points of interest are essentially geological, and it is somewhat difficult to deal with them without pre-supposing some geological knowledge.

It must be remembered that in the Avon quarries we have not only a sequence of rocks, and a suite of fossils, but also in part a geological history of the district. Hence, it seems best to describe in chronological order the events of which these rocks form a record.

Reference to Fig. 2 shows that the strata of the Avon Gorge succeed one another in a regular series, the lowest and therefore oldest, being at the north-western end, and successively higher and newer beds succeeding one another till Observatory Hill is reached. Here a great fault or dislocation traverses the rocks, as will be described in the sequel, and part of the sequence is repeated.

The oldest and lowest rocks are those known as the Old Red Sandstone, and are seen in several of the cuttings between Sea Mills station and the tunnel through Durdham Down, and also on the opposite side of the river. They consist of red sandstones, pebble beds, and shales and, except for a few scales of fish, have yielded no fossils. They are undoubtedly deposits laid down in shallow water, and the lack of the remains of any purely marine forms of life has led to the belief that the rocks were laid down, not in the open sea, but in a lake or land-locked gulf. The cutting immediately north of the mouth of the tunnel through the Downs on the Upper Avonmouth line and the corresponding one on the lower line as far as the Black Rock quarry (*see* Fig. 1) are in the strata which immediately overlie the Old Red Sandstone and consist of shale with thin bands of limestone, these strata indicating a deepening of the water as compared with that in which the Old Red Sandstone was deposited, while the abundance of marine fossils shows that depression of the area had allowed fairly open sea to overflow into, and thus to replace, the lake or land-locked gulf in which the Old Red Sandstone accumulated. These beds are in

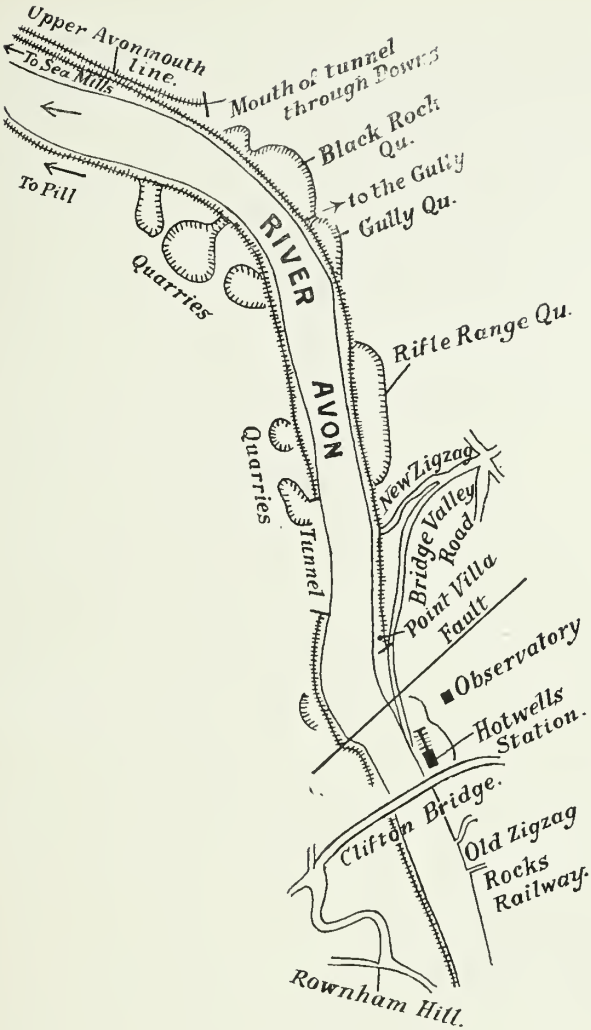


FIG. 1.—Sketch map of the Avon Gorge.

Scale 4 inches = 1 mile.

Railways shown thus

the main soft and not suitable for quarrying, and where they occur the sides of the Avon valley are relatively low and gently sloping.

Attention may here be drawn to a thick band of red limestone which, owing to its superior hardness, makes a prominent feature a few yards to the north of the mouth of the tunnel through the Downs, and is seen also by the towing path. Examination shows that this rock is mainly made up of the ossicles or bits of the jointed stem of crinoids or sea-lilies—a group of animals, which while nearly extinct at the present day, flourished in immense numbers in former geological times, so that their hard parts are the main constituents of thick beds of limestone.

As one passes up the river towards Bristol the strata just described will be found to be soon succeeded by beds of massive limestone exposed in quarries on both sides of the Avon ; and at once, owing to the superior hardness of the rock, the sides of the valley increase in height and it takes on the character of a gorge.

Massive limestones, with occasional interruptions of greater or less importance now commence, and prevail throughout the whole extent of the Avon Gorge, and indicate that our area for an immensely long period formed part of an open sea of considerable depth, and sufficiently far removed from land for little or no mud to reach it, so that the corals and other lime-secreting animals, which are very intolerant of mud, could flourish. There are many groups of organisms all of which have the power of abstracting carbonate of lime from sea-water and using it for the building up of their shells or other hard parts, and of these the corals, crinoids, brachiopod-shells and the microscopical foraminifera all played an important part in the formation of the limestones of the Avon Section.

In these lower limestones seen in the Black Rock quarry below Sea Walls, crinoids and brachiopod-shells are the most important limestone builders. The latter are abundant on some of the rock-faces near the northern end of the quarry, the former are better seen on the weathered surfaces of the rocks between the towing path and the river than in the quarry itself. The fossils characteristic of this level of the

limestone, however, may be better collected in the quarries on the left or Somerset bank of the Avon than on the right or Gloucestershire bank. Numbers of teeth of sharks or rays have been found at certain levels in the upper beds of the Black Rock quarry.

Beyond the Black Rock quarry a dry valley, the Gully, leads down to the Avon, and at the mouth of this valley is a second quarry, to which the Gully gives its name. Two kinds of rock, contrasting rather strongly with one another, are seen in this quarry, the contrast being still more marked in the corresponding quarry on the left bank of the Avon. The lower beds occupying the main part of the quarry are formed of a very compact white rock, the upper beds consist of yellower rock much divided up by bedding planes which are conspicuous by their absence in the lower rock. Close examination of the lower rock show that it is oolitic, *i.e.*, rock composed of immense numbers of little rounded particles of carbonate of lime, which, as is seen under the microscope, commonly consist of a series of layers arranged concentrically round some centre. The name oolite alludes to the resemblance which the weathered surface of the rock bears to the roe of a fish. This peculiar deposit may be taken to indicate that the water had shallowed since the deposition of the limestones of the Black Rock quarry, as at the present day similar deposits are being formed in the shallow water near coral reefs, where there is so much carbonate of lime in solution that it becomes readily deposited round any little nucleus as a centre. Such a limestone is an example of one formed chemically, as compared with one organically formed, such as a crinoidal limestone.

It will be noted that for some distance to the south of the Gully the side of the Gorge is unquarried; this is because the strata here consist not of massive limestone, but of thin, calcareous beds alternating with shales. The limestone bands, too, have been in a great measure dolomitized, *i.e.*, the carbonate of lime has been by the addition of carbonate of magnesia converted into dolomite. This again is a process which indicates shallow water conditions.

The succeeding Great or Rifle Range quarry is in massive limestone, which affords evidence that relatively deep and

clear water conditions were once more established. The limestones here are to a considerable extent formed of the remains of a coral *Lithostrotion*, many large masses of which may be seen in the rocks towards the northern end of the quarry. Much of the limestone, however, is found, when examined microscopically, to be largely composed of foraminifera, and a second thick band of oolite occurs in the southern part of the quarry.

From the southern part of the Rifle Range quarry to the bottom of Bridge Valley Road the rocks are variable in character consisting of limestones (some of them oolitic, others full of corals) alternating with shales and bands of hard sandstone. The numerous corals can be readily seen in the exposures by the towing path between the bottom of Bridge Valley Road and Point Villa, also between some buildings (Engine sheds)* near the towing path, and the level crossing to the New Zigzag path.

The highest and newest strata are hard red sandstones and shales, seen behind the cottage near the bottom of Bridge Valley Road. The section does not, nevertheless, end here, since resting on these red beds are the massive, limestones of Observatory Hill. The succession is not, however, a normal one—the rocks of Observatory Hill are in reality the same strata as those occurring in the southern part of the Rifle Range quarry, which after passing for a distance of about 1,000 feet underground have been brought again to the surface by a ' great fault ' or dislocation (*see* Fig. 2.) This fault is very well seen in the exposure behind the cottage, alluded to above, near the bottom of Bridge Valley Road. The red sandstones and shales are seen here to be sharply folded by the grinding of the massive limestone over their surface. The base of the limestone mass, too, is smoothed and polished by the friction as it moved over the beds below. The strata repeated by the fault extend on till the section of Carboniferous Limestone ends near the Rocks Railway entrance.

Upon the highest beds of the Carboniferous Limestone series were deposited the hard sandstones (Millstone Grit) which are well seen at Brandon Hill, and following them the Coal Measures. There are no good exposures of these

* Demolished during the last few weeks (March, 1913).

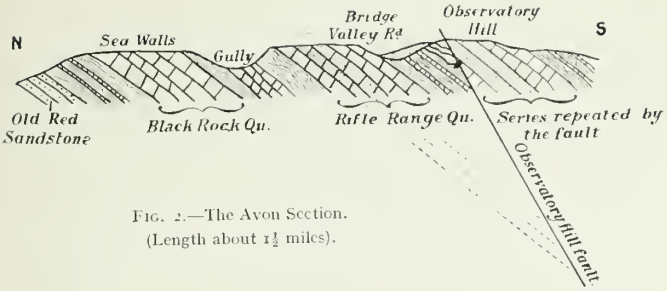


FIG. 2.—The Avon Section.
(Length about 1½ miles).

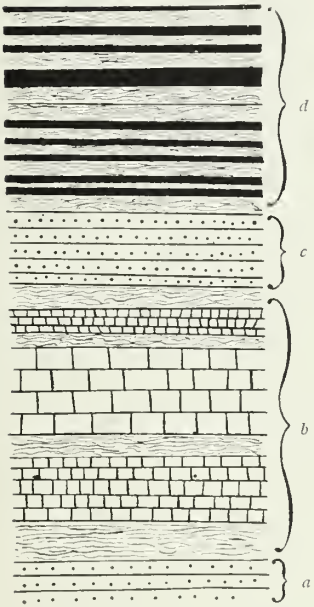


FIG. 3.—Diagrammatic representation of the older strata seen in the neighbourhood of the Avon Gorge.

d. Lower Coal Measures.

c. Millstone Grit.

b. Carboniferous Limestone series.

a. Old Red Sandstone.

Sandstones — Limestones

Shales — Coal seams.

strata in the neighbourhood of the Avon Gorge, but the Coal Measures lie beneath much of the city of Bristol.

The whole series of beds from the Old Red Sandstone to the top of the Coal Measures reaches a thickness of some 12,000 feet and represents a period of geological time of very great length. With the deposition of the Coal Measures the first and by far the longest chapter in the history of the Avon Gorge came to an end. Fig. 3 shows the succession of strata from the Old Red Sandstone to the Coal Measures, the beds being represented in their original horizontal position.

If, standing on the right bank, one looks across the Avon at the quarry lying almost opposite the New Zigzag path, a few feet of strata will be seen at the top, lying horizontally on the upturned edges of the Carboniferous Limestone. An immense period is represented by the gap between these horizontal Triassic strata and the upturned Carboniferous Limestone on which they lie, and during this period great physical changes took place, not only in the Bristol area, but throughout north-western Europe. Tremendous earth stresses gradually folded the rocks of north-western Europe into a series of ridges with alternating troughs, some of these lying east and west such as the Mendips, others north and south such as the Pennine Chain. The Observatory Hill 'fault' was also a product of these earth stresses. The rocks of which these ridges are composed had been accumulating under the sea in the manner described above, to a thickness of many thousand feet, and as they were ridged up and brought within reach of wave action thousands of feet of the newer strata were stripped off the arches of the folds. In the troughs, however, they were left and still remain. Thus the Carboniferous Limestone and Old Red Sandstone rocks of the Avon Gorge were laid bare by the removal of the thousands of feet of Millstone Grit and Coal Measures which once covered them, while in the Mendips erosion went on to such an extent that the Silurian rocks which underlie the Old Red Sandstone were exposed. It is not, however, implied that the whole of this erosion was the work of the sea—the earth stresses raised the ridges, and finally the whole area above sea level, and it became part of a conti-

nent, and was subjected for a long period to the atmospheric agents such as rain, frost and rivers whose effect is to wear away the rocks and sculpture the surface. In this way were formed hills with intervening valleys, many of which, such as that between Durdham Down and Kingsweston Hill and that in which Bristol lies, are important features at the present day. Fig. 4 (A), represents diagrammatically the rocks of the Avon Gorge after the prolonged period of atmospheric erosion.

While erosion was carving these valleys in the Bristol area the districts to the north and south were occupied by Salt Lakes. But as time went on the Bristol area became gradually further depressed, the salt lakes extended into it, and as they crept up the hill-sides and their waters occupied the valleys in the district which now forms the Downs, the rock-fragments lying about were cemented together forming a characteristic local deposit, the Dolomitic Conglomerate, which occupies much of the valley between the Downs and Kingsweston Hill, and is the stratum already alluded to as lying horizontally on the upturned edge of the limestone in the quarry on the left bank opposite the New Zigzag.

Depression and submergence still continued, and eventually our area was once more completely submerged beneath the waters of the open sea. When standing upon Observatory Hill one can scarcely fail to notice the fact that Clifton and Durdham Down, Leigh Woods and the neighbouring hills all form parts of a plateau with a singularly level surface best seen at Sea Walls, *see* Fig. 4 (B). This level surface is in all probability the work of the waves of this ancient sea, is in fact part of a 'plain of marine erosion.' The Avon Gorge, the Gully, and certain other valleys which now dissect this old plain were, it will be remembered, at this time non-existent. The neighbourhood of the Avon Gorge illustrates well the contrasting action of marine erosion, which tends to produce a level surface, and 'subaerial' erosion, which tends to produce a diversified surface.

Following on the formation of the plain of marine erosion, the strata known as the Lias, Oolite and Cretaceous were doubtless deposited in our area, burying the Downs under

perhaps, some 2,000 feet of strata which are shown diagrammatically in Fig. 4 (c). Of these beds no trace remains in the immediate neighbourhood of the Avon Gorge. They have been completely removed by erosion during a second great continental period which set in after the deposition of the Chalk. During this continental period which continues to the present day, our area was uplifted, perhaps to considerably above its present level, and the now existing river system began to develop, being established, as has been already pointed out, not on the rocks now forming the surface of the ground, but on some of the now vanished horizontal strata shown in Fig. 4 (c). The shore line probably lay far to the west of its present position, and the Avon, with a length and descent far greater than at the present day, was capable of erosion vastly in excess of anything than can be performed by the sluggish stream of modern times.

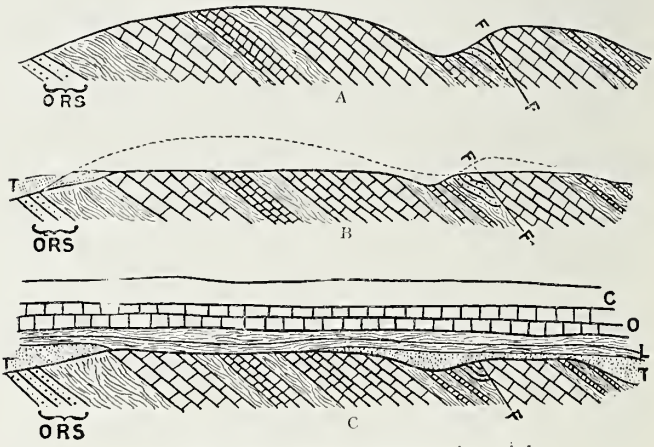


FIG. 4.—Rocks of the Avon Gorge at successive periods.

A. After the post-Coal Measures upheaval and atmospheric erosion.

B. After submergence and the planing-down of the surface of the older rocks.

C. After the deposition of the newer rocks.

O.R.S. = Old Red Sandstone. F = Fault. T = Trias. L = Lias.
O = Oolite. C = Cretaceous.

Photo.] PLATE I.—THE GORGE—CHEDDAR. [*C. H. Collard.*

CHEDDAR GORGE AND CAVERNS

By Henry N. Davies, F.G.S.

The village of Cheddar is romantically situated at the mouth of a gorge carved out of the Carboniferous Limestone of the Mendip Plateau. The magnificence of its cliff scenery and the grandeur of its stalactite Caverns have made Cheddar famous ; and thousands of visitors—lovers of natural scenery and students of natural phenomena are brought here daily by train, motor and brake, through the summer and autumn months.

The village itself has attractions for the archæologist ; the church with its typical Somerset Tower of Perpendicular design and its carved shrines and the canopied cross in the market square are each worthy of careful study. But in this short paper we have only to deal with the geology of the cliffs and caves ; and give reliable information on the prehistoric contents of Gough's Cavern.

Every visitor should *walk* through the gorge. Its beauties can only be appreciated by being examined from different points of view, in some places the cliffs are so high and the road so narrow that the visitor must make an effort to place himself in a position from which he can take in the full beauty and proportions of nature's handiwork. The first sight of the cliffs should be taken from the hotel gardens. From a spot in front and on the left of the cascade, a good photograph of the grand entrance to the gorge with the pretty mill-pond in the foreground may be obtained. From the steps of a cottage a short distance up the road, the best view of the Lion Rock may be taken. The striking resemblance to a crouching lion, which the forces of nature—rain, wind and frost—have

here carved out of the solid rock, is astonishing; even the eye-socket and the compressed mouth having been clearly chiselled (Plate II.). A short distance beyond the entrance to Gough's Cavern the rocks close in to form the narrow gate of the Pass, and further on the road widens again and becomes steeper. The towering cliffs on the right hand or south side of the road contrast with the lower and in some places almost destroyed rocky wall on the left. Students of physical geography have here a good example of the effects of rain driven against the opposing face of the

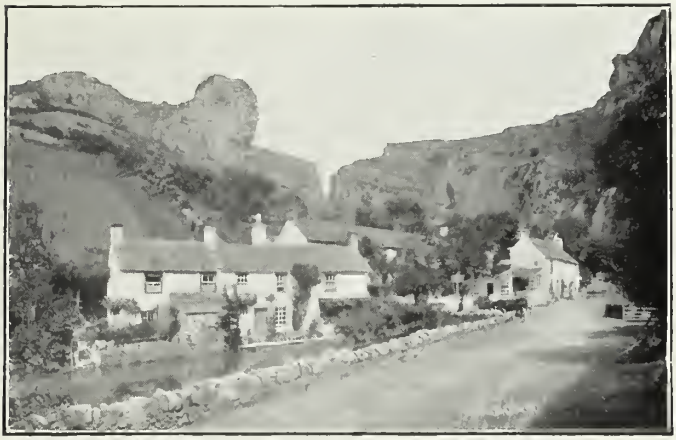


PLATE II.—CHEDDAR.

chasm by the prevalent South or South-West winds. The surface rock becomes saturated, and so is rendered an easy prey to winter frosts, which year by year, as the centuries pass, will eat back the parts that most readily yield until a sloping bank like that above the quarry has been formed. The dip of the rock is, as shown in Fig. 1, towards the south, and this fact would greatly hasten the work of rain and frost on the north side of the gorge. The south wall of the original chasm, over which the wind and rain sweep, will not be so violently attacked, and these destructive

forces will only work in the joints of the rocks as a saw works on the edge of a block of wood, cutting deeper and deeper, the longer the action is continued. The beautiful pinnacle rocks, a little higher up the gorge (Plate I.), were originally a solid, undivided wall; but the joints have been widened by the mechanical and chemical action of rain, assisted during winter months by the splitting force of frost, till at last the grandest bit of the cliff scenery has been produced. The rocky ledges on the cliffs, formed along the lines of stratification, are decked with greenery; small shrubs, grass, moss and flowers—among which may be seen in favoured spots the Cheddar pink—grow in gay profusion in summer, and add greatly to the picturesqueness of the rock masses. As the road winds upwards

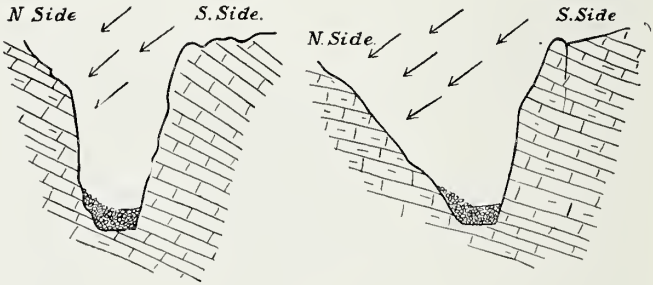


Fig. 1.

the cliffs become lower, and occasionally give way altogether to great masses of screes, among which the botanist may find the yellow poppy and Cheddar fern, and on the grassy slopes close at hand the Bee orchis.

At several points the visitor may notice, either at the base or on the face of the cliffs, large holes or small caverns, which in bygone ages have served as hiding or dwelling places of prehistoric and even of historic men. All have been ransacked by energetic antiquarians, and some have yielded bones and teeth of bear and wolf, while a few articles of bone, bronze and iron have been found in them, which prove their occupation by early man.

The return walk will delight the stranger with an ever-changing prospect of towering pinnacles, massive buttresses, and gigantic castellated forms, as he follows the winding down-hill road to the village.

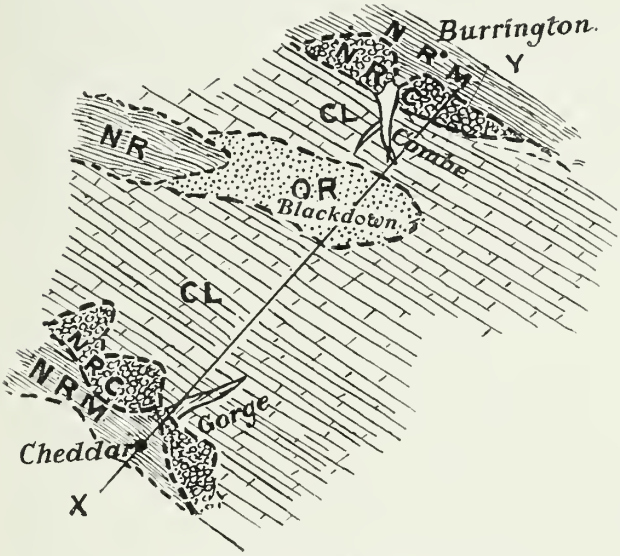
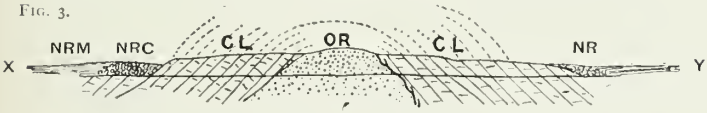


Fig. 2.—Geological Sketch Map across Mendip.
From Cheddar to Burrington

NRM.	New Red Marl.	CL.	Carboniferous Limestone.
NRC.	New Red Conglomerate.	OR.	Old Red Sandstone.

Geology.—Before we examine the caverns a few words on the geology of the district might not be out of place. The great mass of upland, known as the Mendips, consists of rock representing the Old Red Sandstone and Carboniferous formations. The gorge is cut out of the latter; while

Fig. 3.



Section along X - - Y

the higher uplands of Black-down, are exposures of Old Red rocks. A great fold or dome-shaped uplift of these anciest rocks is passed over in walking from Cheddar to Burrington Combe. The upper portion of this dome was ages ago destroyed by the combined action of the sea and of atmospheric agents, and the covering Carboniferous Limestone having been thus removed from the crest the upper beds of Old Red Sandstone were exposed, as shown in the accompanying diagrams (Fig. 2, 3). Professor Ramsay (Memoirs Geological Survey, Vol. I., 1846), calculated that the 6,000 feet of rock shown by the dotted lines (Fig. 3) had been removed from the Anticline of Mendip before the Old Red beds could have been thus exposed.

The Triassic or New Red beds which flank the hills were deposited in an ancient sea out of which the Mendip group of islands arose. They consist of a thick breccia or conglomerate (quarried at Draycott), and the Red Marl which covers large portions of the plain around Cheddar.

The Caves.—Gough's Cave will first demand inspection on account of the light it throws on Gorge formation, and of its interesting contents. The excavation of this extensive cavern was commenced many years ago by the venerable father of the present leaseholders. He cleared out an immense accumulation of rock waste from the entrance, then cut through a bed of calcareous deposit, soft and chalky, varying in thickness from 4 to 11 inches. Under this he found red cave earth from 4 to 6 feet deep, which contained large limestone blocks that had fallen from the sides and roof of the cave; and underneath this a thick floor of crystalline Stalagmite reposing sometimes on the rocky bed, but in places on a bed of sand and pebbles. After years of labour the large and lofty carverns of the interior were reached; and the wealth and beauty of the Stalactitic formations which they contain well repaid the toil of the explorer.

In December, 1903, on clearing out a deep fissure for drainage purposes—the cavern often being flooded in the winter—human remains were discovered embedded in the Cave Earth underneath the Calcareous crust. The

Plate III.

Human Skull found in Gough Cavern, Cheddar.

skeleton was in a doubled-up position, the head lower than the legs, and jammed between two blocks of limestone. The character of the fissure, and the undisturbed Stalagmitic crust and Cave Earth, make interment out of the question. The remains were those of a man about 5 feet 5 inches high, of muscular build, with slightly

Plate IV.

prognathous jaws, a prominent brow, and an exceedingly thick (9 mm.) skull.

In the vestibule of the cavern, embedded in the same cave earth were found bones and teeth of cave bear, horse and hyaena. Numerous flint flakes, knives, points, scrapers, etc., were also found in the same deposit, and

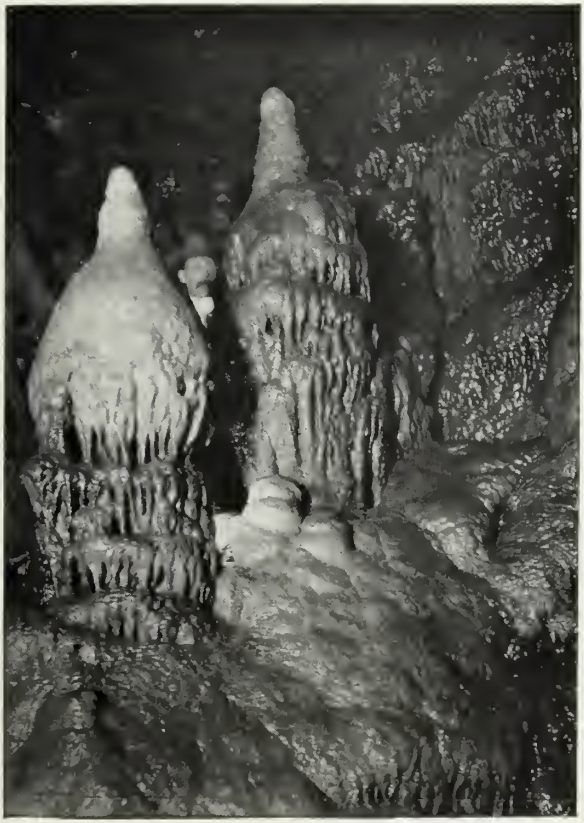


PLATE V.

especially around a large tabular block of limestone which had evidently been used as a fabricating table by the primitive occupant. Professor Arthur Keith, in "Ancient Types of Man," Mr. St. George Gray, Secretary Somerset Archæological Society, in his article, "Notes and Queries," March, 1904, and the present writer, *Quarterly Journal Geological Society*, Vol. LX., 1904, agree that the man lived either towards the close of the Palæolithic or at the beginning of the Neolithic period of human history in this country; which, according to the lowest computations, would give about 25,000 years as the age of this Cheddar man.

The Cavern is also interesting because it throws light on the problem of Gorge formation. It was the fashion some years ago to attribute all such gorges as those of Clifton, Cheddar, Ebbor, etc., to the rending asunder of the rocky crust by Volcanic and earthquake forces. But, incredible as it might at first seem, all these, and even those more stupendous chasms of the Niagara and the Zambesi, have been formed by the slow and long-continued action of running water. The rains which fall on Mendip sink into the limestone through joints, and potholes or swallets, and having dissolved carbonic acid from the air and from decomposing vegetable matter the solvent action of the water is greatly increased. As the Carboniferous limestone belongs to one of the most ancient series of Stratified rocks, the percolating waters have had ample time, in the millions of years which must have elapsed since the Mendips became dry land, to eat out by solution those underground channels and extensive reservoirs which we know, from the labours of Dr. Baker and Mr. Balch of Wells, to exist in "The Underworld of Mendip." * In a deep and high recess or wing of the Cavern may be seen many enormous blocks of limestone which have fallen from the walls and roof of the fissure; the same destructive action has been going on in the main cavern, and if continued long enough it will in future ages be opened

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* "The Netherworld of Mendip," Baker and Balch. Baker & Son, Clifton.

out to sunlight. Then instead of a cavern we should have a narrow gorge, which would become wider under the united action of rain and frost, and thus would be formed another Cheddar Gorge in miniature. If members of the N.U.T. could arrange to visit Wookey Hole, they would there see the whole process in operation: the subterranean river issuing from the Cavern and flowing through that portion of the gorge which has already been formed; and within, the high fissured walls and the great blocks of limestone which have fallen from them. The river Axe has been formed in the heart of the hills by numerous streams which, cutting their own small channels, unite eventually, plunging downwards, and forging onwards in subterranean darkness, to issue at last from the cave mouth at Wookey.

In such a manner was Cheddar Gorge produced. Let the reader imagine the northern side to be restored so that the roadway would pass between tall cliffs on both sides; replace the material which in the course of ages has been stripped from the cliff face; insert the blocks which have fallen in from the roof, and allow the stream to occupy its ancient bed, and he will then have traced back the physical history of Cheddar Gorge and Caves to their pristine conditions as subterranean waterways similar to those through which the river Axe is now plunging in its course from Priddy to Wookey Hole.

Although we have referred at some length to Gough's Cavern, its contents and teachings, there is another beautiful specimen of Nature's silent, hidden work, the entrance to which is opposite the Hotel. Cox's Cavern is not so large as Gough's but very accessible, dry, and more compact. It was famous for its Stalactites of curious forms and wondrous beauty years before the larger cavern had been explored. The drooping pendants, rising spires and domes, curtained walls, and striking resemblances of the Stalactites and stalagmites to natural objects, often clearly reflected in pools of crystal water, have made this the favourite cave with thousands of visitors in the past, and the writer would strongly recommend a visit to both caves in order that the grandeur and the delicacy, the vastness and the

minuteness of the working of natural forces may be fully appreciated. The guide is often asked : " How were these beautiful objects formed " ? and " How long does it take to produce a Stalactite " ? The first question is easily answered. Water which has percolated through limestone will—if assisted by carbonic acid in solution—dissolve a certain portion of the rock. The drops which hang from the roof of the Cavern, will, when they attain a certain size, be compelled to fall by the force of gravity ; part of the lime is left behind in the watery film on the roof, and part is carried down and deposited, as the moisture evaporates, on the Cavern floor. Thus as years and centuries pass the accumulations on the roof and on the floor become visible, and take the form of pendants on which the drops hang, and rising domes on which the drops fall. But here arises the difficulty in answering the second query. The *time taken* to render the deposits visible will, of course, depend greatly on the amount of carbonic acid dissolved in the percolating water, on the nature of the rock whether porous, compact or crystalline ; perhaps even on the accessibility or exclusion of the outer air, and we have no universally applicable rule for measuring either of these important factors in the formation of a stalactite. Professor Boyd Dawkins (" Cave Hunting," p. 39, 1874) shows that stalagmite deposits may be formed much faster than is ordinarily believed to be the case, founding his opinion on observations made on the Jockey Cap Stalagmite in the Ingleborough Cave, which he shows had increased 4 inches in circumference, and 8·25 inches in height between the years 1845 and 1873. Mr. Pengelly has on the other hand proved that a Stalagmitic deposit in Kent's Cavern, near Torquay, only increased ·05 inch in thickness in 250 years, and that if the growth of the mass had been continuous and equal it must have taken 720,000 years to form. These extremes—as they no doubt are—only show how unreliable is the calculation of Stalagmitic growth, or of the age of deposits below Stalagmitic floors, when made from observations on what is taking place to-day.

In concluding this rapid sketch of Cheddar Gorge and Caves the author feels that in the few short pages allotted

to him, only an outline of the subject could be given ; but he hopes his remarks have been sufficiently suggestive to enable visitors, interested in authropology, geology or botany, to pursue their favourite subjects by enquiry on the spot ; and if during their short stay in the district he can be of any service to them, either as lecturer or guide, he will be most happy to place his services at their disposal.

Photo. ROOF GARDEN, MARINE PARADE, WESTON. *H. Jelly*

WOODSPRING PRIORY

By P. B. Burroughs

The Priory of Woodspring is interesting from its close connection with the murderers of Thomas Becket, Archbishop of Canterbury, in the reign of Henry II., and from its architectural features. It is picturesquely situated, about six miles from Weston-super-Mare, towards the north-east, at the foot of the southern slope of a ridge of mountain limestone which bounds the Severn Sea. Tennyson in his " In Memoriam " says :—

> " There twice a day the Severn fills ;
> The salt sea-water passes by,
> And hushes half the babbling Wye,
> And makes a silence in the hills."

Becket was murdered in the afternoon of Tuesday, December 29th, 1170, in the deep gloom of the north transept of Canterbury Cathedral. The outrage—a crime which sent a shudder throughout Christendom—was committed by four knights in the King's retinue. They were Reginald Fitzurse, Rich le Bret, William de Traci and Hugh de Morville. Fitzurse and Le Bret were Somerset men, and De Traci hailed from the West also.

A few years after the murder, Robert de Courtenai, lord of the Manor of Kew Stoke, who had married Matilda, daughter of Fitzurse, founded a chantry on his property at Woodspring, west of the present Priory. It was dedicated to St. Thomas of Canterbury, and in it De Courtenai was afterwards buried. Remains of this Chapel existed till 1835, and a Norman capital was found on its site and is to be seen at the Priory.

Woodspring Priory.

About the year 1210 Sir William de Courtenai, son of Robert and Matilda, founded Woodspring Priory. It was built in the Early English style of architecture and was dedicated to the Holy Trinity, The Blessed Virgin Mary, and St. Thomas of Canterbury. It was a house of the Black Canons of St. Augustine of the Order of St. Victor, and was connected with the Abbey of St. Augustine in Bristol, the church of which is now the cathedral.

The Priory consisted of the church, cloisters to the south with chapter room and dormitory, refectory, kitchen, Prior's lodgings, fratry, barn, minor offices, and another barn at Worle.

The monastery was certainly not one of those —

> "Happy Convents, bosomed deep in vines,
> Where slumber Abbots purple as their wines."

The Brethren were about ten in number and the revenue was small, £87 a year. The Priory was not a success and had no history of importance. The first Prior was Reginald, who died in 1243, and the last was Roger Tormenton, who, with seven Canons, signed the Acknowledgment of the King's Supremacy, August 21st, 1534. Suppression followed September 27th, 1536.

The entrance to the Priory is from the west through a large gate and a wicket of the fourteenth century into the fore court, and the west front of the church is then seen. The outline of the large west window in Late Perpendicular style is seen in the gable with a shortened niche above, which probably contained a representation of the Holy Trinity. On the north side of the window is a niche probably for the Blessed Virgin Mary and the Holy Child, and a similar one to the south for St. Thomas of Canterbury.

Below the string was the west doorway of the church, now a modern window. The nave is flanked by octagonal well-proportioned turrets. A porch at the foot of the south-west turret gives entrance to the cloister. The cloister was of three walks; the west and east walls only remaining. Over the west alley was the wooden dormitory, entered through an elegant lancet doorway and a circular stone stair turret at the south end. At the north end a small doorway gave access to the church for the night services.

The kitchen and refectory abutted against the southern wall, and in the east wall is seen the beautiful cusped doorway of the chapter room. The cloister garth was the centre of monastic life, and beneath its green sward doubtless

repose many of the Brethren. The chapter room is destroyed and only a fragment of the fifteenth century choir remains. The stately central tower stands 65 feet high on its oblong thirteenth century base. The two upper

stages were rebuilt in the fifteenth century and made square in plan with a three-light window in each face of the belfry, filled with elegant stone tracery. The parapet is of open quatre-foils, the cusps supporting a central stone sculptured on the inside with artistic representations of grapes, vine leaves, and acorns nestling on oak leaves. The round columns which support the tower can be discerned inside though cased with Perpendicular mouldings, and shafts carry the fan tracery of the vault.

The south-east column supported an altar ; some of its tabernacle work remains. The north aisle contained the altar and shrine of St. Thomas of Canterbury, and the mutilated piscina resting on a demi-angel is visible.

The nave of three bays with two large windows was rebuilt with the north aisle in the sixteenth century. It is now a farm house.

In 1849 the north wall of Kewstoke church, which once belonged to the Priory, gave way and in the gap a stone reliquary was found. It is of Caen stone, in the early English style, and is about 2 feet high. It represents a draped female, veiled and under a canopy. The face and hands are gone. The hands probably held the sacred heart or a chalice. At the back is a recess closed by an oak door. In the recess was a cup containing the residue of Mammalian blood. It is suggested that the Canons obtained some of Becket's blood and placed it in this shrine as a sacred relic, and that at the dissolution they built the shrine into the church to preserve it from desecration.

To the south-east stands a fifteenth century hall—The Prior's or Friars' Hall. The windows are of good design, and the open collar beam roof of oak with curved braces is noteworthy. The hall is without fire-place and the state door of the Prior in the north wall is richly moulded. The Prior's lodgings abutted against it.

The barn stands to the north west, a protection from the winds. It is a fine example of fourteenth century work. The small moulded doorway to the south-west, approached by a semi-circular flight of steps, is of great beauty and the masonry round it is " plumed with fern."

The fish ponds are to the west shadowed by stately elms.

The misericords of the church now adorn the north choir stalls of Worle church, which once belonged to the Priory.

The poetical though incorrect sonnet of Bowles on the Priory should be recalled :—

> "These walls were built by men who did a deed
> Of blood,"——

Photo.] GROVE PARK—WESTON. [*H. Jelly.*

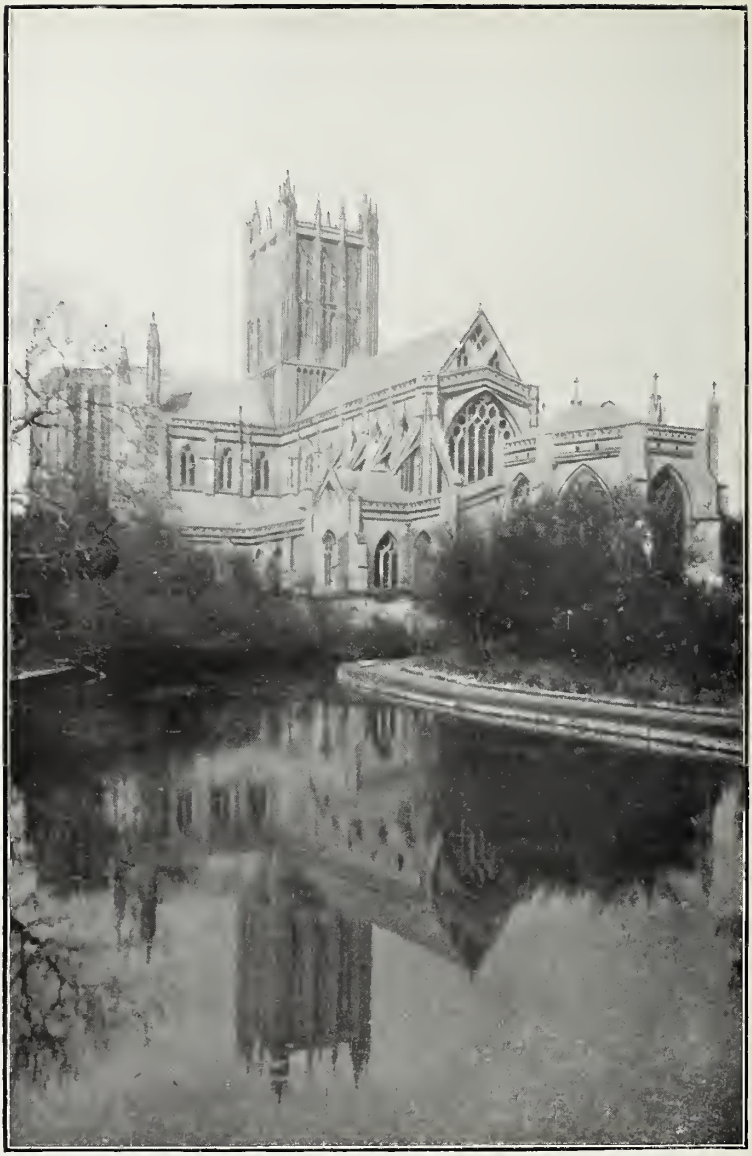


Photo.] WELLS CATHEDRAL. [*Dawkes & Partridge.*

WELLS

By The Rev. Chancellor Scott-Holmes

The city of Wells is a reversion of the old order of the Roman Empire. It has not got a bishop, because it was a city, but it is a city because it has a bishop. A hamlet by the copious springs, which empty many caverns under the neighbouring hills of Mendip, it received its first Christian missionary towards the end of the seventh century. There is a tradition that it was originally called Tiddington, but it has possessed the name of Wells, "The Springs," ever since St. Aldhelm in the first decade of the eighth century founded the church of St. Andrew, a few yards to the west of them. That church of St. Andrew was then only a mission church, part of the incipient organisation for the conversion of Somerset, but two hundred years afterwards it was raised to cathedral rank, bishop Athelm, who was consecrated the first bishop of Wells in 909, having chosen it for his cathedral church. So Wells, the little hamlet by the springs of St. Andrew, became a city. We know, however, very little either of the church or the hamlet, before the Norman Conquest. The bishop was often away founding churches and organising his diocese, which from his cathedral church was now becoming known as the diocese of Wells, and the clergy were very few who were called upon to minister in the church and train the young clergy in the Mother Church. In 1061 Giso, a Lotharingian, was appointed bishop of Wells. You can see in the Chapter Library a papal Bull given to him by Pope Nicholas II. confirming to him and the See all the estates and privileges which he then enjoyed. Giso tells us that the cathedral clergy were then only four or

five and were very poor. He gave them from the estates which had been granted to the diocese, a distinct endowment, built them a refectory and dormitory, and organised the body under the direction of a Provost. On Giso's death in 1088, his successor Bishop John de Villula, removed his episcopal chair to Bath, since that city had been granted to him by King William Rufus. The canons of Wells, however, did not approve of the change, and agitated at Rome and at the Court of Henry I., claiming that the church of St. Andrew was still a cathedral church and insisted that it should rank alike with the monastic church of Bath. So about 1145, when Robert of Lewes was Bishop of Bath, the canons of Wells got their way, and Bishop Robert reorganised the body of clergy at Wells on the lines of the present constitution. There were to be a body of canons, and from among them certain officers chosen to administer different duties. These canons were all to have separate endowments, thence the names which their prebendal stalls bear, and in addition, if they resided and took part in the services of the church they were to receive certain fixed portions of the common fund belonging to the church. The special officers or dignitaries were the Dean to preside over the chapter, the Precentor to organise the services and music, the Chancellor to look after educational and legal matters, and the Treasurer to take care of all the altar valuables, and the structure of the church, and in addition there was the "Bishop's eye," the Archdeacon of Wells, to keep the Bishop in touch with his great church. This organisation still exists. It was expanded and enriched by Bishops Reginald and Jocelyn, but fundamentally it is as Bishop Robert designed it originally.

Now it must be remembered that there were never any monks at Wells. The canons were all secular canons, each with his own income and house, and the only difference to-day is that we sanction a married clergy rather than a celibate one. There were monks at Bath and at Glastonbury, but not at Wells.

There was another body of clergy attached to this Cathedral Church, of which we have proof in the Vicars' Close. The work of the church, its full and dignified series

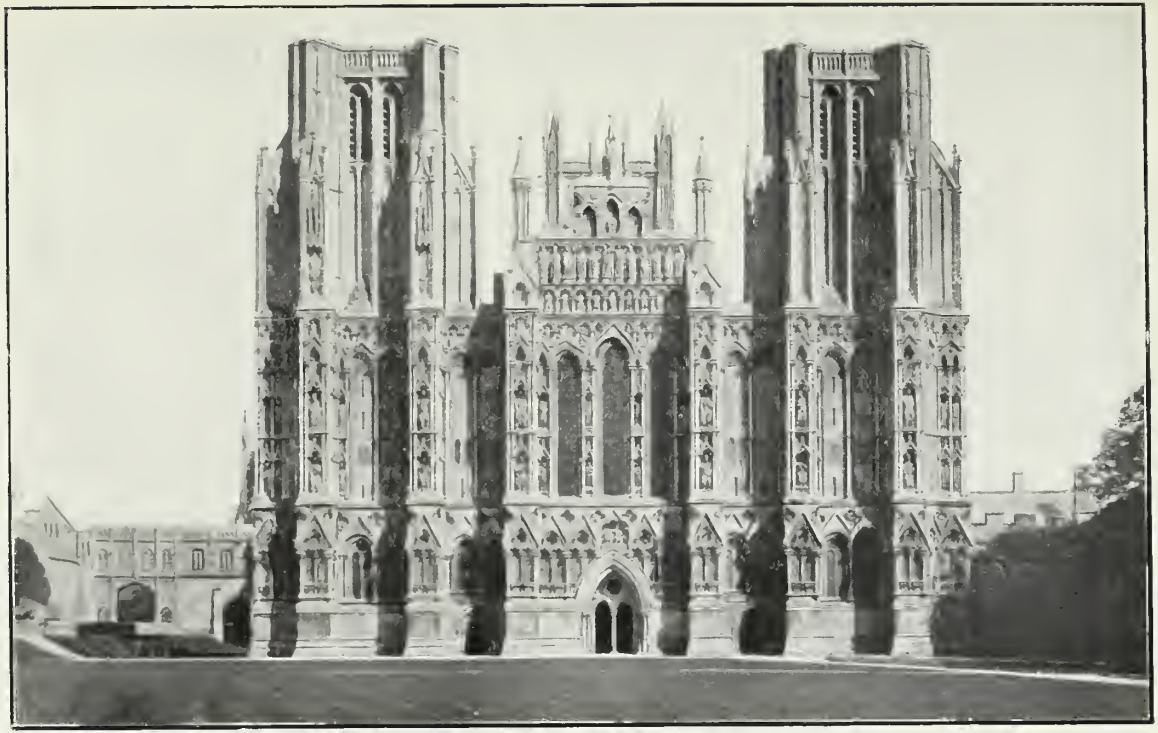


Photo.] WELLS CATHEDRAL—WEST FRONT. [*Dawkes & Partridge.*

of services must go on day by day, and if canons were not in Wells it was necessary for them to provide deputies or vicars, and in the time of Bishop Jocelyn 1206–1242 there were so many vicars that organisation became necessary, and Jocelyn enrolled them in a college, and Bishop Ralph of Shrewsbury, 1329–1363, enlarged and built them a series of houses on the north side of the church, with a chapel of their own at the top and a dining hall at the bottom. This Vicar's Close still exists, and is still occupied by the vicars, but only three of these vicars are priests, the others being lay clerks or vicars who conduct the musical part of the Services.

So much for the organisation. It was secular and not monastic, and so in the sixteenth century it weathered the religious storms of the Reformation and remains to-day the same constitution as Bishops Robert and Reginald had planned it in the twelfth century. The bishop as the head, and yet no longer able to take part in the details of the work of the Cathedral, since his predecessors had granted those duties exclusively to the care of the Dean and Chapter, then the Dean and the Canons, and then the vicars clerical and lay. It is a striking instance of the continuity of the Church of England. We have already said that the Church came first, and the town grew up around it. This fact is clearly shewn to the visitor in the isolation of church and palace and deanery and canons' houses from the town. All round the wells of St. Andrew were these ecclesiastical foundations. What grew up in the neighbourhood was outside of the Liberty to the south and west of the church.

The Church of to-day belongs largely to the twelfth century, *i.e.*, the three western bays of the choir, the transepts, and all the nave to within two bays of the west end. It is early English or Gothic, of a transitional character, showing the elaborate detail and rather heavy work of late Norman. There is the square abacus but also the pointed arch. The north porch also belongs to this first effort. Then in 1206–1242 Bishop Jocelyn built the west end, and joined it to the earlier nave. The west end is a screen of statuary, probably the finest and earliest in

Photo.] WELLS CATHEDRAL—THE NAVE. [*Dawkes & Partridge.*

England. To flank this wall there were short towers of one stage only, each tower containing two chapels, one above and the other on the ground floor. But they did not appear above the façade any more than did Reginald's central tower rise up above the ridge of the nave and choir roof. Bishop Jocelyn, also built a cloister of three walks, east, west and south, and the doors from the church into these cloisters and the door south-east towards the Palace, show this work of his. Then towards the end of the thirteenth century and during the first two decades of the fourteenth century rose the Crypt or Treasury and the Chapter House over it, and beyond the church a new Lady Chapel to the far east. The Dean and Chapter had also made additions to Reginald's central tower, the two stages of it, though somewhat less ornamented, belonging to this period. This new work, however, created a difficulty. In 1333 the Chapter was summoned hurriedly to take steps to prevent the ruin of the centre part of the church, since the old piers of Bishop Reginald's tower were unable to support the new work put up, 1300–1320, and the inverted arches north, west, and south, so remarkable a feature and perhaps disfigurement of the church, were inserted 1333–1338. Then Bishop Ralph of Shrewsbury, 1329–1363, pulled down the earlier apsidal east end of the church, prolonged the choir eastward for three bays and built the ambulatory to join on the church to the Lady Chapel. To him also we owe the five fourteenth century coloured windows of the choir, the eastern one being one of the glories of England and to-day almost entirely ancient glass.

Towards the end of the fourteenth century, the Dean and Chapter and Bishop Harewell, 1367–1386, began work on the two short towers which flanked Jocelyn's façade. The south-west tower could now rise above the wall of statuary since the central tower, two stages higher, would allow of it, and yet preserve its position as the centre point of view from the outside, and about 1424 as part of a benefaction, left by Bishop Bubwith, 1407–1424, the north-west tower was built. Neither of these towers were ever meant to be capped by spires, they are both

complete in themselves, and are properly finished off as a permanent work.

Meanwhile Bishop Bubwith had begun to rebuild the eastern walk of the cloister, and the two other walks were taken in hand under his successor, Bishop Stafford, and completed under Bishop Beckington, 1443–1465. With him the work on the Cathedral Church came to an end. What has been done since has been merely by way of repair.

We must now turn and examine the domestic buildings which surround the Cathedral Church. To the north is the Vicar's Close, with its fifty little houses, several now united, but the originals can be seen in the gable walls above the roofs. This was linked on to the church by the archway and passage made in 1457, which enabled the Vicars to proceed at all hours to and from the church without admitting them outside and into the town. Westward of this Close came the houses of the dignitaries, the Archdeacon of Wells, the Chancellor, the Treasurer, the Dean, the Precentor, etc. The house of the archdeacon is now the Library and Lecture Rooms of the Theological College. The houses of the Treasurer, Precentor, and Chancellor have practically disappeared, later buildings being on their site, but including small portions of them. The deanery dates largely from the time of Dean Gunthorpe, the reigns of Edward V. and Henry VII., but there was an earlier thirteenth century hall which had been worked into the later and more ambitious design of the courts, an outer and an inner one and a gateway opening in to it.

The Palace stands on the south side, *i.e.*, on the side where originally Bishop Giso built his dormitory for his five or six canons, and the central portion of the present building belongs to the time of Bishop Jocelyn, 1206–1242. It was reached originally by a bridge and causeway across the stream made by the water of St. Andrew's Wells. Later on, in the thirteenth century, Bishop Burnell erected a new chapel, the present one, and a great banqueting hall, the ruins of which form so striking a feature as one enters over the drawbridge. This was dismantled and ruined by

Sir John Gates in 1555. The moat and embattled walls, the present gate house, drawbridge and bastions, are the work of Bishop Ralph, of Shrewsbury, who erected them in 1343 as a protection from the townspeople, who were then intent in throwing off their allegiance to him, and had acted riotously towards his officers. The Bishop had been compelled to appeal to the Crown for protection, and the buildings were erected out of the proceeds of the fine inflicted on the townspeople.

But this is ancient history. Friendships are prepared for—established on—previous quarrels. The old social organisation of England had silently and slowly developed and grown out of the feudal systems which had incased it, and in the reign of Queen Elizabeth the town got its charter and bishops, deans, canons, and townspeople have lived happily together ever since.

T. S. H.

Foundations of Edgar Chapel.

GLASTONBURY

By F. Bligh Bond, F.R.I.B.A.

Well-nigh four hundred years have passed since that great era of social and political change which ushered in the modern age. This, whilst it marked the advent of material and intellectual progress, left us the poorer for the loss, largely irreparable, of those great treasuries of art and sublime creations of architectural genius, the monastic houses and churches of the middle ages.

Shorn of their once glorious equipments, the stately churches still stand here and there to perpetuate the proud dream of their creators, but alas! for those that are gone. Too often but an obscure and crumbling fragment alone survives, a faint memory of vanished glories. Or again, it is a name alone that is preserved, and even the site is but vaguely known. It is hard to realise at the present day that England of the past of which it could be said that nowhere might a man walk a half-day's journey without reaching the shelter of one of these friendly walls.

Always, from earliest times, these islands had been the home of those brotherhoods of austere and kindly men, who, forsaking the world, lived apart for the service of religion and the good of their kind. In the rude days when no settled government existed, when violence and the greed of the strong made men's lives and properties perpetually insecure, the monasteries were the refuge of the oppressed. When darkness reigned without, they kept alight the torch of faith and learning. Through ages of coarse barbarism they hid the pearls or art and science, and as farmers, doctors, clerks and schoolmasters, they supplied the place of an otherwise non-existent middle class. Even before

Christianity appeared here, we have traditions of such brotherhoods living apart in the service of learning and religion—fraternities such as the Culdee colleges, whose origin must be sought in those distant times when the old religion was in its prime, and Eastern sages taught a faith and organised a national and social polity which moved our Roman conquerors to wonder and despair. The study of archæology in its practical form—the delving for the relics of the great systems of the past, has a peculiar value in the domain of education, a value which is beginning to be felt more and more by thoughtful men at the present day.

Glastonbury, of all the ancient places in this dear old England of ours, seems imbued with the magic of the past. This is so in spite of the obvious fact that but little now remains in visible form of its ancient greatness. But that little is precious to the architectural student, since it exhibits still in its fragments a type of design faultless in proportions, composition, and detail. In the brief survey which the present space allows, we will try first to gather an idea of what now stands, and then, looking backward endeavour to reconstitute a picture of the past.

The little town lies in the westward hollow of the Isle of Avalon—a place once deserving the name of island, when marshes closed it in, and all the district to the west was a great mere—but now an island only in the sense that it is a hill rising from the central moors of Somerset.

The town lies four-square about a central space in which the Abbey stands, and this enclosure was anciently surrounded by a massive battlemented wall, now almost gone, though still nearly perfect in the time of Charles II., as we may see from Hollar's prints. Outside the walls there remain three very remarkable buildings of the mediæval period. These are, the Pilgrim's Inn in the High Street, built by Abbot Selwood in the latter part of the fifteenth century: the Abbot's Tithe Barn, a work of the earlier half of the fourteenth century, still in its original state, and containing some choice architectural features (Plate I.): and the Tower of St. Michael's Chapel on the Tor Hill, a lofty mount which dominates the whole island. There was in

old time a pilgrim's chapel on this hill, but only the shell of the western tower now remains. It carries us back to the middle years of the fourteenth century. The dedication of the chapel recalls others similarly placed. St. Michael's Mount in Cornwall, Mont St. Michel in Brittany, and the church on St. Michael's Hill in Bristol will rise to the recollection, and the dedication of these soaring heights to the Archangel seems truly to accord with their character.

Photo.] THE ABBOT'S KITCHEN. [*W. Moline.*

Formerly there were great gates in each face of the Abbey wall. Now only one, the Abbot's Gate, remains. Recently reclaimed from alien uses, its grand old arches restored, it once more serves its original purpose, and through it we are admitted into the Abbey precincts.

Once in the grounds, we find ourselves at the extreme north-west angle of a long range of building, of which the extreme western end, the first approached, is the chapel of St. Mary the Virgin, built in 1184–87, a work which if nothing else remained here, would still make Glastonbury famous, for, apart from its beautiful late Romanesque design, it stands upon the spot upon which tradition says that the first Christian church in Britain stood. Next adjoining on the east is another building of a century later—the Early English Galilee, or ante-church to the great Benedictine Abbey which lay further again to the east. Of this we can still see a little of the shell of the aisle wall on the south side of the nave, the two tall piers from which spring broken segments of the great quire arch, and beyond again fragments of the quire walls, and in the distance some remnants of the eastern walls, and the foundations of a chapel terminating this great range of building. The first impression is one of enormous length.

From within the west wall of St. Mary's chapel to the apse of the chapel of King Edgar at the extreme east the measurement is no less than 580 feet, more by 40 feet than our longest cathedral and only exceeded by old St. Paul's. The church was cruciform, and some fragments of the transepts are extant. Their complete outline is not visible. though on the south side it has been partly recovered and traced out. But on the north, closely adjoining the great pier of the quire, is a beautiful little roofless chapel within an arch whose chevron enrichments are a marvel of delicacy and ingenuity. This is traditionally dedicated to St. Thomas of Canterbury (Plate II.).

The high arcaded walls of nave and quire, with their clustered piers and tall clerestory lights are gone, and now but a memory. Even their foundations are rooted out. On the broad greensward which now spreads from aisle to aisle, we may reconstruct in imagination those towering walls, and see again the high ribbed roofs of stone with their carved bosses. The mouldering fragments which lie about the ruins can tell us much. The written records, scanty though they be, are a help. It is not impossible, with their aid, to gleam some faint idea of the past grandeur

of the great church. From its foundation in 1184, down to its final break-up in 1539, when poor old Abbot Whiting met a cruel death, there were but few intervals during which some improvement was not in progress, and perhaps Richard Bere, Whiting's immediate predecessor, did as much towards the beautifying of his church as any. Sad it is to think how soon after his death all the fine work he did was despised, dismantled, and finally torn down and used up piecemeal with the rest to satisfy the needs of a district greedy for stone. The story of the ruin is this, that for more than two hundred years it has been a ready quarry for the whole country-side, and that stone which was too coarse for building has been thrown into the swamp to make a solid causeway across the marsh.

Of the missing features of the Abbey church it has been the writer's good fortune to bring to light those which were most important, and it may now be claimed that the plan is in its general features no longer a matter of speculation. The Edgar Chapel was the first to be laid bare and after a year's excavation, in some places to a depth of over 10 feet, the site has been plainly marked on the surface in permanent material (Plate III.). This was the last addition to the Abbey, and from the nature of the detail encountered in the trenches, must have been a noble work—a smaller edition of King Henry VII. chapel at Westminster. Its length, 87 feet, proves it an important addition to the whole, and verifies an old tradition as to the length of the Abbey Church.

More recently the footings of a great North Porch, longer than that at Wells, have been discovered and marked, and the foundation walls of two Western towers to the nave. At the extreme west, traces of a chapel dedicated to St. Dunstan have been unearthed, and in this instance luck, in the shape of an old document, turned up at the right moment to aid the explorers. In some cases the remains have been so scanty, so defaced and torn by those who plundered them that it has been a hard mental exercise to reconstitute their form. But by perseverance this has been done, and now we may claim to know the secret that has so long lain hidden.

The Monastic buildings have claimed attention, and these will provide work for brain and hand for many a long year. The foundations ramify over acres of ground. Already the heart of the monastery is revealed, the site of the Refectory laid bare, with half the cloister, and the area of the Chapter-house. There is a peculiar fascination about the plans of the great Benedictine and Cistercian houses, due to the orderly law which they follow in their plans, and to the minor individual differences which each house shows. Variety in Unity is their character.

Old Saxon Crosses—Glastonbury.

Glastonbury may be said to follow the orthodox lines in its general scheme, but it is so huge, and its parts so many, that there are necessarily many individual features to be discovered which will be peculiar to it. The remains are meagre, and will perhaps disappoint the traveller in search of the picturesque, but from their very scantiness, the work of reconstituting their form is the more enthralling. Every stone may be said to hold its secret, and the

abundance of richly moulded fragments offer material which may yet furnish the clue to much of the lost design.

Alone of all the monastic offices the Abbot's kitchen remains intact (Plate IV.). This great octagon of stone, with its solid stone roof, doubtless owes its preservation to its imperishable covering, which rendered it proof against decay. The building was not for the service of the brethren but is a monument of the Abbot's hospitality and was used for his guests. Facing it on the east was the Abbot's house —a herb-garden between. Closely adjoining were the Royal lodgings, and kings were frequent guests in the larger monasteries. A little north of the kitchen may be seen a broken section of walling. This was the Almoner's office where the Abbot's charities were dispensed, and twice a week victuals were distributed to the poor.

For those who have read the chronicles of the olden days it will be easy to conjure up other scenes in the daily life of the monastery, and to go further back, we can picture in our minds the building of the great church by Ralph, the King's Chancellor, and his army of freemasons and master-builders with unbroken centuries of venerable tradition and skilful practice behind them. We see around them the debris of a great fire, and further back, another noble minster, that which the Norman Abbot Herlewin erected. We have a few beautiful fragments now of his work, and some slight traces of his plan. Looking still backward, beyond the coming of the Norman rulers, our thoughts may linger for a moment on the great Abbot and statesman, Dunstan, under whose masterly control this great Benedictine community was first enrolled, an orderly, disciplined and well-housed body of monks in lieu of a loosely organised and slackly governed assemblage of religious, many of whom thought more of wife and family than sacred vows. And passing over that forlorn period in which the Danish wars had left Glastonbury desolate, we approach the times of the great Christian King Ine, ruler of the West Saxon people, under whose beneficent sway Glastonbury, the Jerusalem of the old British church, was not despoiled nor dishonoured, but had its privileges

confirmed and enlarged by charter and its church enriched by gifts.

Yet further back come other noble figures. St. David, Bishop of Menevia, remembered through later times for his interest in Glastonbury, and of whom many traditions are preserved: St. Bridget of Kildare, and St. Patrick, both missionaries here, and before them again, other and more widely-reverenced personages, who are said to have preached the gospel and founded here in apostolic times the first Christian settlement in England. As to the truth of these sayings, each must judge for himself. It is at least worthy of note that all continental legend supports the story of Joseph of Arimathea's mission, and that the statements which have been attributed by the sceptical to monkish inventions of the twelfth and following centuries have from time immemorial been traditionally held and believed by the peasantry in the remoter districts of the west.

It may be that the soil hides many secrets of the earliest days, and that archæology may assist in unrolling the scroll of forgotten history, so that we, looking earnestly at the figures in the scroll, may see them once more instinct with life, and tradition will merge in the full light of knowledge.

THE LAKE VILLAGES OF SOMERSET

By H. St. George Gray

It is a difficult task to describe the lake villages in the neighbourhood of Glastonbury within the compass of so short an article as this. The story they tell is made up of a large number of details, a bare summary of which cannot convey to the reader more than a general impression of the many interesting features these habitations exhibit, both in respect to structure and the antiquarian remains that have been revealed. But those requiring closer information should refer to the large illustrated work on the Glastonbury Lake Village, by Mr. Arthur Bulleid, F.S.A., and the present writer, the first volume of which was published about a year ago.

Archaeologists, and the general public also, have evinced the greatest interest in these peculiar lacustrine villages, marking and exemplifying as they do the cultural epoch of Great Britain known as the Prehistoric Iron Age, or Late-Celtic Period, concerning which, from a domestic point of view, comparatively little had been known previously.

When one speaks of these lake villages as being of prehistoric origin, a period that can only be vaguely estimated or measured by geological time is not suggested, but a comparatively short period immediately preceding and, to a lesser extent, overlapping the beginning of our present era.

We do not, with any degree of certainty, attribute the origin of these villages to the Brythons, or to a people of mixed Iberian, Goidelic and Brythonic blood, it being quite possible that the Belgae (a partly Teutonic people)

were responsible for the formation of these marsh villages. There is a firmly rooted tradition (supported by the sixteenth century maps of Speed and Camden) that a colony of Belgae formerly occupied Glastonbury, and Cæsar records that they had settled in Britain before his own time.

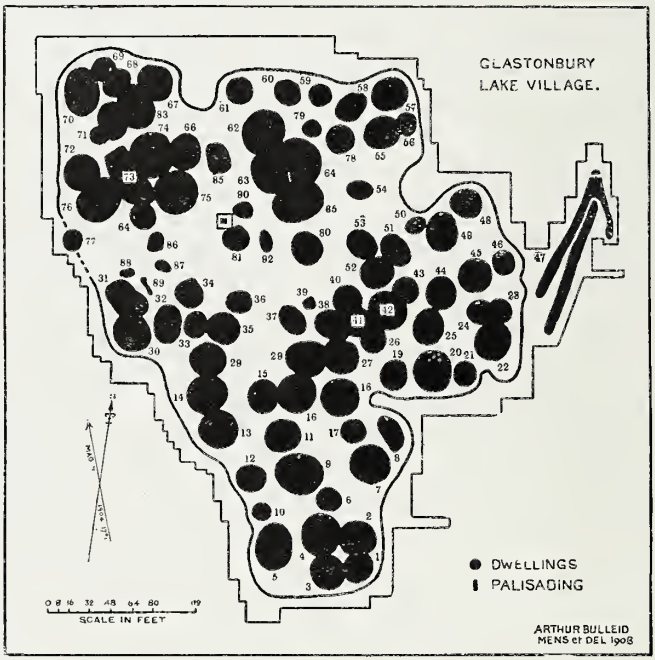
Taking all circumstances into account we are safe in assigning these settlements to about B.C. 200 to A.D. 70. What is most certain is that the influence of Roman culture had not reached these villages when they were abandoned. The record is one of purely native (British) art in the Early Iron Age.

In 1892 Mr. Bulleid discovered the lake village about 10 furlongs north of the town of Glastonbury. In that year the excavations were begun, but it was not until 1907 that the whole area had been examined. Although 14 miles distant from the Bristol Channel, this village is less than 18 feet above mean sea-level. A lake about 5 miles round, as late as 1580, came very near the village; it is now completely drained, but the fields still bear the name of Meare Pool.

On the western side of the Pool and 3 miles west of the Glastonbury Lake Village is the more recently discovered lake village at Meare, situated about 500 feet south of the River Brue. It is 11 miles from Burnham and only some 13 feet above mean tide-level. This village is being excavated by Mr. Bulleid and the writer on behalf of the Somersetshire Archæological and Natural History Society, and the remains are to be seen in the County Museum at Taunton Castle; most of the relics from the other village are exhibited in the Museum at Glastonbury. The excavations at Meare are generally in progress for four weeks in the early summer.

The selected areas for these villages were surrounded by shallow water in which leaves and rushes had accumulated for ages. Trees (oak, alder, silver birch, willows) were felled on the spot, other timber being brought to the sites. These, with much brushwood and stones, formed the bulk of the substructure. At Glastonbury the whole area, about 3½ acres, was enclosed by a border-palisading, consisting

of large piles kept together by hurdle-work. Up to the present time no palisading has been found at Meare. The first village consisted of 89 low circular mounds marking the sites of the huts. At Meare there are two distinct groups of mounds (separated by a large piece of ground some 250 feet in length), covering an area about 225 feet from north to south by 1,600 feet from east to west.



The floors of the dwellings consist of super-imposed layers of clay from 18 to 30 feet in diameter, around which the hut walls were constructed of upright posts, the interspaces being filled with wattle-work and daubed clay. One large piece of wattle-work, found lying horizontally in the swamp, showed that the vertical part of the walls

was 6 feet in height. These wicker dwellings lend immediate probability to the familiar legend which describes the first British Church at Glastonbury as having been constructed of wattles.

The huts had central posts of oak, the stumps of several having been found in position, and these, together with the top of the hut-walls, formed the supports for the thatched roofs.

The clay floor having been laid down, a hearth (generally of clay and stone and averaging 4 feet in diameter) was built up near the centre of the dwelling. On account of the softness of the under-lying peat and the great weight of the super-incumbent clay, the floors were constantly sinking, and this necessitated the raising of them by introducing fresh layers of clay, and the hearths had to be renewed from time to time also.

Why, with upland sites available in all directions these villages should have been built at all remains an unsolved problem. It may never be proved whether the builders were displaced from elsewhere by an invading wave of migration, or were themselves migrants who either preferred the semi-aquatic life of the meres to upland conditions, or were driven for safety into these positions. The cemeteries of the villages are not yet known.

The relics, which are numerous, are of considerable interest, throwing much light, as they do, on the everyday life of the inhabitants. The objects are found for the most part on the various floors of the huts; in some of the dwellings the relics revealed were in a calcined condition, and there is no doubt that some of the huts were burnt down.

The objects of utility and ornament consist of the following materials:—Bone, antler, wood, shale, jet, amber, bronze, lead, tin, iron, glass, baked clay, flint and other stone.

The women appear to have been very capable weavers, judging from the various appliances discovered, including the frame-work of one or more looms. A large number of weaving-combs has been found; they were used for pushing home the weft or woof, the warp being kept tight

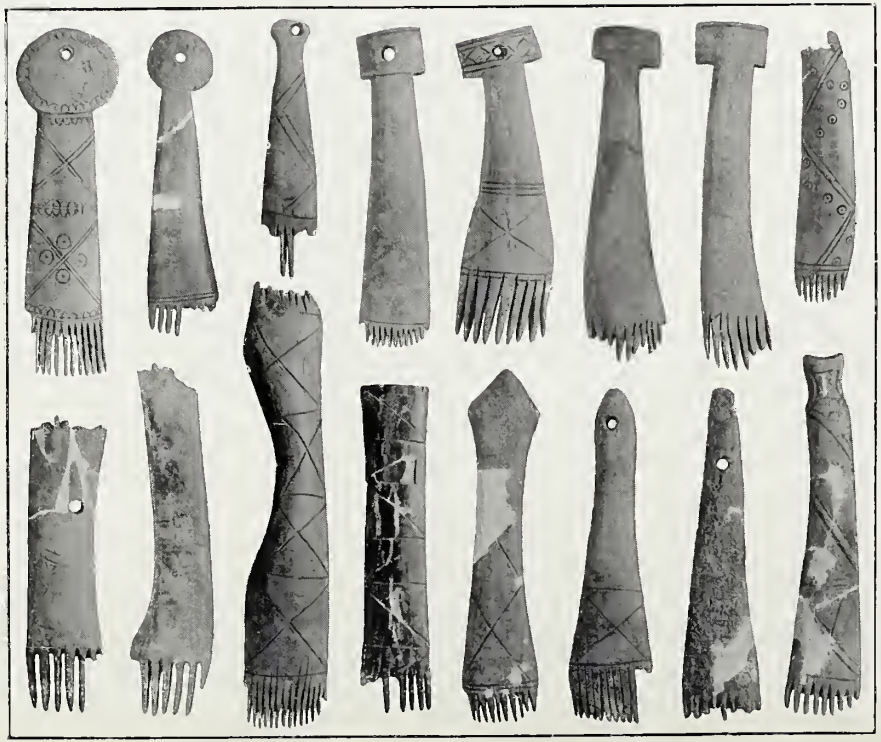


Photo.] WEAVING COMBS OF ANTLER, GLASTONBURY LAKE VILLAGE. [*H. St. George Gray.*

by the baked clay weights which are commonly found. Some of these combs are elaborately ornamented with incised designs. Shuttle-spools of bone are frequently met with, as are the spindle-whorls with which the women twisted their thread.

The villagers were evidently fond of personal decoration, and bronze finger-rings of all sizes are found. More interesting still are the bronze brooches, or fibulæ, of safety-pin design, made from one continuous piece of wire. They are of a type found occasionally in Britain, but more frequently at La Tène, Lake of Neûchatel.

Other personal ornaments include ring-brooches, glass and amber beads, a jet ring, armlets of Kimmeridge shale, dress fasteners, bronze bracelets, etc.

None of the relics, however, have attracted so much public attention as the bronze bowl, found in the Glastonbury Village in 1893, its workmanship being exceptionally fine. It is quite probable that even this work of art was manufactured on the spot. That metallurgy was carried on by these people we are certain, from the fact that many crucibles have been found and remains of conical tubes through which air is conducted into a furnace by means of bellows. Small furnaces, perhaps used in this connection, have been observed. Glass working was also carried on.

Of the iron specimens perhaps the most interesting are the objects which have recently been proved to be currency-bars—as a means of barter. They are of various denominations and were mentioned by Cæsar. The Celtic system of weights appears to have been to divide the pound into sixteen parts, and there is reason to believe that the essential characteristic of our modern avoirdupois measure goes back to the Early Iron Age.

The presence of iron saws, bill-hooks, knives, gouges, axes and adzes, proves that wood was worked very considerably, and the respective marks of these implements are often seen on the boards, piles and mortised beams found. The wooden objects include a ladder 7 feet long, tubs ornamented with incised designs, naves and spokes of wheels, and finely-turned handles for iron tools. The

Photo. RELICS FROM THE MEARE LAKE VILLAGE. *H. St. George Gray.*

dug-out canoe, nearly 18 feet long, was found well outside the bounds of the Glastonbury Village.

Thousands of fragments of hand-made pottery have been found and recorded, including several complete vessels from 1 to 13 inches in height.

Cereals and other vegetable products, and seeds, are found, wheat, barley and peas being quite abundant. A charred mixture in the form of a flattened bun is probably bread.

Most of the human skulls with long heads were discovered outside the palisading at Glastonbury, but, on the other hand, fragmentary human bones and the remains of infants were frequently found in the dwellings.

Animal remains are very plentiful, and include the British shorthorn, the horse, pig, goat, sheep, dog, red-deer, roe-deer, marten, stoat, beaver, and otter. The remains of about thirty species of aquatic and other birds have been collected, and include the pelican, which now nests in few parts of Europe. The birds were killed by means of baked-clay and stone sling-bullets.

We may infer, then, that these lake villagers were not only farmers and herdsmen, but were advanced in the technical arts. Judging from the marked scarcity of weapons of offence, they were a peaceful people. They reaped barley with iron sickles; they smelted lead from the Mendip Hills, using it among other things for making net-weights for fishing; they excelled in the arts of carpentry and pottery-making. They hunted the red-deer and the roe-deer, and domesticated various animals. In their herding and hunting they used big dogs, and their horse-bits were of the snaffle type still used.

The conditions would seem to us at first sight to be of hopeless discomfort, but the real evidence is much to the contrary. The relics are those of an industrious race, and that they had at least some possessions on shore is evidenced by the discovery of horse-trappings and wheels which could have no use in the Venetian conditions of the villages. There is, moreover, no reason to suppose that any article found in these habitations was of other than home manufacture.

Photo.] [*H. St. George Gray.*

FOUNDATIONS OF DWELLING GLASTONBURY LAKE VILLAGE, 1906.

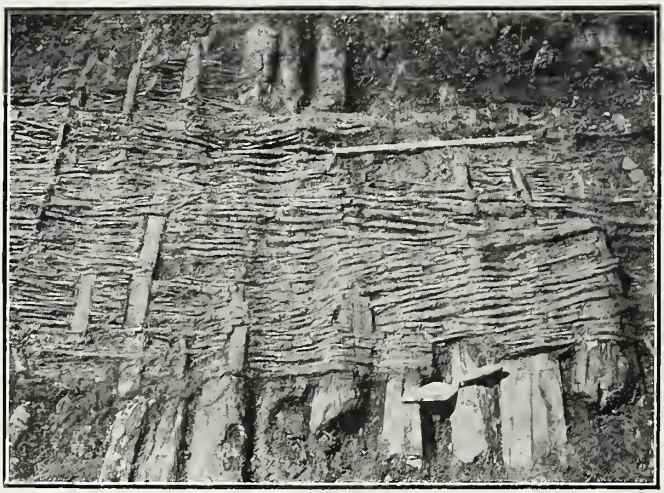


Photo. [*H. St. George Gray.*

HURDLEWORK, MEARE LAKE VILLAGE, 1912.

BATH: THE BEAUTIFUL SPA OF THE WEST COUNTRY

By John Hatton
(*Director of the Baths*).

Situated on the steeply-rising banks of the river Avon in one of the most charming bits of an exceptionally beautiful valley, Bath is singularly fortunate in its setting, and the great architects of the eighteenth century took full advantage of its natural beauties when they planned the stately squares and crescents which make Bath the finest example of Georgian architecture and town-planning this country possesses.

The story of Bath begins long before the Roman occupation and a curious legend tells of the discovery of the Hot Mineral Springs to which the health resort owes its origin and name. Bladud, heir to the British King, Lud Hudibras, between eight and nine centuries before the Christian era, became afflicted with leprosy and was banished from his father's court.

In great distress he obtained occupation as a swineherd in the Avon valley, but ere long the animals in his charge contracted the disease. In the course of their wanderings the swine came to a place of hot springs and mud. The soothing warmth pleased the pigs and day after day they returned to wallow in the hot mud and water.

Quickly their leprosy left them. Their princely master following the example of the swine was cured of his disease and in due course returned to court. Succeeding to the throne he founded his capital around the health-giving

BATH.

springs to which he owed his life—the first beginnings of the now world-famous spa.

With the Roman period we are on surer ground. The Roman Baths were built about the year 55 A.D., and their wonderful remains, carefully preserved by the Corporation of the City, give the visitor of to-day a wonderfully clear idea of the magnificence and extent of the great Roman bathing establishment. The Great Bath occupies a hall 110 feet by 68 feet, its water surface measuring 82 feet by 40 feet. The floor of the bath is covered with the original Roman lead, and the pavements surrounding it and the rectangular and semi-circular recesses remain in a good state of preservation.

A large circular bath, some smaller baths, and hypocausts or heating chambers may also be seen.

In the adjoining Roman Museum are some magnificient architectural relics, one of the most interesting being the pediment of the Temple of Sul-Minerva. A beautiful bronze head of Minerva is to be seen in the Roman Promenade.

Cases of valuable relics discovered during the excavations of the Roman Baths are on view in the Pump Room ; these include a unique case of intaglios. There is also a small leaden Saxon cross, of extreme interest, as being the property of Eadgyfu, Queen of Edward the Elder.

The Grand Pump Room, a singularly handsome eighteenth century apartment, where the hot mineral waters are served for drinking, is the fashionable rendezvous of visitors. In a semi-circular recess is a statue of Beau Nash, and beneath it the famous Tompion clock to which Dickens alludes in "Pickwick Papers." In this Room Queen Charlotte held daily levees during her residence in Bath in 1817.

A window of the Pump Room affords a view of the spring as it overflows in the centre of the mediæval King's Bath. This was the fashionable bath in the days of Nash. The numerous brass rings in the walls were given as thank-offerings for benefits received by bathers from the use of the Bath waters. A conspicuous feature is the effigy of King Bladud. The mineral springs rise in immense volume

at a temperature of 117° to 120° F., the only *hot* springs in Great Britain.

Recently, the eminent scientist, Sir William Ramsay, K.C.B., F.R.S., has discovered that the waters are exceptionally rich in Radium and Niton, the emanation of radium, which is even more potent in its therapeutic efforts than radium itself. To these powerful constituents the healing properties of the waters are in all probability attributable.

The high temperature at which the waters rise enables them to be used in their natural state without any artificial heating. The valuable gases in the waters, rich in Radium emanation, are thus preserved and utilised at the full, natural strength.

The extensive Bathing Establishment is fitted with baths and douches in great variety for the administration of the healing waters. Deep and reclining baths with various modifications of douches, swimming baths, Aix and Vichy douche-massage, the Bertholiet natural vapour bath, Plombiéres douches, and ingenious apparatus for throat and eye sprays, are but a few of the many methods employed. Electric baths and electric hot-air treatment are also successfully used in conjunction with the waters, mud packs are now given with excellent results in suitable cases, and a Zander Institute for the medico-mechanical treatment of joints and muscles has recently been added.

For the opportunities which are afforded for amusement and social gaiety, the city of Bath has long been held in high repute. The Pump Room Concerts, with an unbroken history of upwards of two centuries, are given daily in the concert hall of the Roman Promenade. The building embraces a covered terrace attached to the concert hall, spacious promenades overlooking the great Roman Bath and luxuriously furnished drawing and smoking rooms, the whole affording practically all the comforts and conveniences of a private club.

The distinction belongs to Bath of possessing the first Patent Theatre out of London, and the Assembly Rooms, opened in 1771, are still the scene of the fashionable balls and other society gatherings. Here is the historic cardroom where Mr. Pickwick played his immortal game of whist.

The King's Bath.

The Great Roman Bath.

The charm of a visit to Bath is not dependent upon the seasons. In summer, when out-of-door amusements are in vogue, and the sylvan surroundings are seen at their best, few inland cities afford attractions more pleasing and diversified or scope for a more delightful sojourn. A military band provides music daily in one of the charming parks from May to September. The Institution Gardens are the popular resort during the summer season when the hot mineral waters are served for drinking in the open air from the colonnade fountain. The band plays during the morning drinking hour and Bath provides a summer cure under the pleasantest conditions.

Sports and recreations include rinking and badminton; for the golfer there is the choice of three flourishing clubs with breezy links on the hills; the hunting man finds himself in immediate touch with the meets of both the Bath and County Harriers and the famous Badminton Hounds, and, moreover, has a fine open racecourse to gallop over; there is a variety of tennis, croquet, cricket and hockey clubs, and the old-fashioned amusements of archery and bowls are also provided. In the very heart of the city is a fine recreation ground, where the County Matches of the Bath Cricket Week and various athletic and cycling festivals are held.

The various boating clubs, at whose stations boats may be hired, enable free use to be made of the Avon, and boating is here a very favourite pastime.

As a centre for motoring Bath offers exceptional facilities. All around are picturesque old-world villages, famous in the history of the past, and all the charms of the beautiful West Country. Cheddar Cliffs and Caves, Wells, Glastonbury, Stonehenge, and Bradford-on-Avon, with its unique Saxon church and great tithe barn, are a few only of the many delightful excursions available by regular motor-car services.

Few cities are richer in historical associations and many of the houses are distinguished by bronze tablets, fixed by the Corporation to mark the home of some famous resident of the past.

Sheridan has perpetuated the Bath in which he conducted his romantic wooing, and where he gathered material

for the finest among English comedies; here it was that the imaginative author of "Tom Jones," found in the genial and benevolent Allen, at Prior Park, the personage destined to immortality as "Square Allworthy"; it was at a house in the Circus that Gainsborough began his great career by painting pictures at five guineas each; hard by the Earl of Chatham dwelt, representing Bath in two Parliaments, and it was here in after years that the younger Pitt came to recruit a system shattered by the storms of State.

It was at a house in St. James's Square, just off Park Street (which the immortal Pickwick likened to the perpendicular streets one sees in a dream), that Dickens, Forster and Maclise received the hospitality of the enthusiastic Landor, and where, according to Forster, the fancy which took the form of "Little Nell" in the "Curiosity Shop" first dawned upon the genius of its creator.

The statesman, Edmund Burke, spent the evening of his days at Bath, and his house, on the North Parade, is marked by a tablet unveilled by the Hon. Whitelaw Reid, the late United States Ambassador to Great Britain.

Sir Thomas Lawrence likewise lived here; Lord Clive and Admiral Phillip, the first Governor of New South Wales; Chesterfield wrote at Bath several of his famous letters, and Lytton portions of his latest novels, while Sir Walter Scott takes us to the dame school near the Parades where he spent many happy days.

Nor does this in any way exhaust the catalogue of celebrities that graced Bath annals in a memorable age. It was from his house in New King Street that Herschel "swept the heavens" and there he first watched the planet Uranus swim into his ken. Mrs. Thrale, the friend of Dr. Samuel Johnson, lived many years in Bath, and here she met the husband of her later years—Piozzi. Johnson himself was here with the Thrales, and we are not without evidence that he had a distinct partiality for Bath. In one of his letters he counsels a friend "not to waste your time in unprofitable sorrow, but go to Bath and endeavour to prolong your days."

Justly enough Bath merits a place among the "shrines of the Empire."

FLORA OF WESTON-SUPER-MARE

By J. W. White, F.L.S.

The more noteworthy plants that occur within three or four miles of the town may be grouped in three divisions as follows :

On Coast Sands, Dunes and Shingle.

Papaver dubium.
Glaucium flavum.
Sisymbrium Sophia.
Diplotaxis muralis.
Cakile maritima.
Viola ericetorum.
Saponaria officinalis.
Honkeneja peploides.
Cerastium tetrandrum.
Cerastium semidecandrum.
Sagina maritima.
Sagina nodosa.
Ononis horrida.
Trifolium arvense.
Vicia lathyroides.
Rosa spinosissima.
Anthriscus vulgaris.
Œnothera odorata.
Carduus tenuiflorus.
Hyoscyamus niger.
Lycopsis arvensis.
Cynoglossum officinale.
Myosotis collina.
Anagallis arvensis.
Salsola Kali.
Atriplex spp.
Euphorbia Paralias.
Epipactis palustris.
Carex arenaria.
Phleum arenarium.
Ammophila arundinacea.
Festuca uniglumis.
Festuca arenaria.
Agropyron junceum.
Equisetum hyemale,
Equisetum variegatum

On Salt-marsh and Alluvium.

Cochlearia anglica.
Ranunculus circinatus.
Ranunculus heterophyllus.
Ranunculus Baudotii.
Brassica nigra.
Senebiera didyma.
Spergularia salina.
Spergularia marina.
Medicago arabica.
Bupleurum tenuissimum.
Carum segetum.
Pastinaca sativa.
Oenanthe fistulosa.
Oenanthe Phellandrium.
Sium angustifolium.
Artemisia maritima.
Aster Tripolium.
Glaux maritima.
Plantago maritima.
Beta maritima.
Salicornia spp.
Suæda maritima.
Sagittaria sagittifolia.
Butomus umbellatus.
Hydrocharis Morsus-ranæ
Ruppia spiralis.
Juncus effusus.
Juncus inflexus.
Juncus acutiflorus.
Juncus Gerardi.
Triglochin maritimum.
Scirpus Tabernœmontani.
Scirpus maritimus.
Carex disticha.
Carex panicea.
Carex rostellata.
Carex acutiformis.
Carex riparia.
Alopecurus bulbosus.
Glyceria aquatica.
Sclerochloa maritima.
Bromus racemosus.
Bromus commutatus.
Lepturus filiformis.
Hordeum pratense.
Hordeum maritimum.

On Carboniferous Limestone.

Ranunculus parviflorus.
Erophila brachycarpa.
Cochlearia danica.
Cochlearia officinalis.
Erysimum cheiranthoides.
Viola hirta.
Viola calcarea.
Helianthemum polifolium.
Silene maritima.
Cerastium pumilum.
Hypericum pulchrum.
Hypericum montanum.
Erodium moschatum.
Geranium columbinum.
Lathyrus macrorrhizus.
Trifolium scabrum.
Trifolium striatum.
Sedum rupestre.
Rosa agrestis.
Trinia glauca.
Centranthus ruber.
Asperula cynanchica.
Rubia peregrina.
Silybum marianum.

Centaurium pulchellum.
Chlora perfoliata.
Nepeta Cataria.
Daphne Laureola.
Orchis pyramidalis.
Allium oleraceum.
Carex humilis.
Aira caryophyllea.
Koeleria vallesiana.
Koeleria gracilis.
Poa compressa.
Sclerochloa loliacea.
Avena pratensis.
Avena pubescens.
Asplenium marinum.

In addition to the species enumerated above, *Aster Linosyris* and *Antennaria dioica* still exist in very small quantity in the neighbourhood of Weston. It is feared that *Eryngium campestre* is now quite extinct, much of it having been built over and the remainder destroyed by trampling.

Photo.] KNIGHTSTONE PAVILION. [*A. G. Dovey.*

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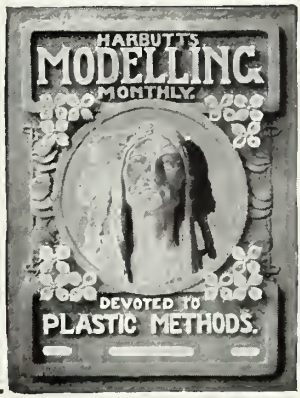

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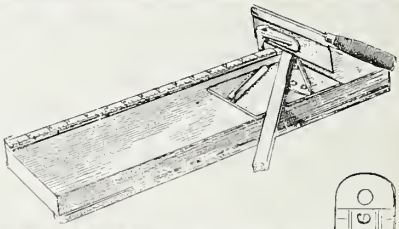

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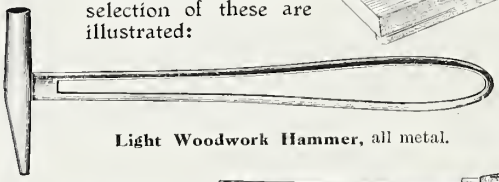

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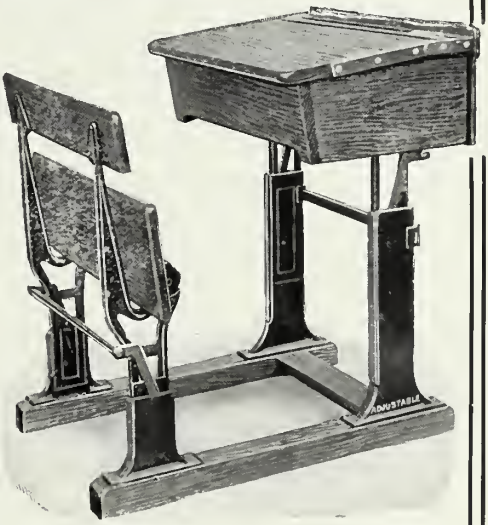

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